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### 1.0.1 UGC NET CSE | December 2006 | Part 2 | Question: 21 top

Which algorithm has same average, worst case and best case time ?

A. Binary search
B. Maximum of n number
C. Quick sort
D. Fibonacci search

ugcnetcse-dec2006-paper2

Answer key

### 1.0.2 UGC NET CSE | December 2004 | Part 2 | Question: 25 top

How much extra space is used by heapsort ?

A. $O(1)$
B. $O(\log n)$
C. $O(n)$
D. $O(n^2)$

ugcnetcse-dec2004-paper2

Answer key

### 1.0.3 UGC NET CSE | October 2020 | Part 2 | Question: 69 top

Match List I with List II

With reference to CMM developed by Software Engineering Institute (SEI)

| | List I | | List II |
|---|---|---|---|
| $(A)$ | Branch-and-bound | $(I)$ | Keeps track of all partial paths which can be candidate for further exploration. |
| $(B)$ | Steepest-accent hill climbing | $(II)$ | Defects difference between current state and goal state |
| $(C)$ | Constraint satisfaction | $(III)$ | Discovers problem state(s) that satisfy a set of constraints |
| $(D)$ | Means-end-analysis | $(IV)$ | Considers all moves from current state and selects best move |

Choose the correct answer from the options given below:

A. $A-I, B-IV, C-III, D-II$
B. $A-I, B-II, C-III, D-IV$
C. $A-II, B-I, C-III, D-IV$
D. $A-II, B-IV, C-III, D-I$

ugcnetcse-oct2020-paper2 non-gate algorithms

Answer key

### 1.0.4 UGC NET CSE | October 2020 | Part 2 | Question: 70 top

Match list I with List II

| | List I | | List II |
|---|---|---|---|
| $(A)$ | Topological sort of DAG | $(I)$ | $O(V+E)$ |
| $(B)$ | Kruskal's MST algorithm | $(II)$ | $O(VE)$ |
| $(C)$ | Bellman-Ford's single-source shortest path algorithm | $(III)$ | $\theta(V+E)$ |
| $(D)$ | Floyd-Warshall's all pair shortest path algorithm | $(IV)$ | $\theta(V^3)$ |

Choose the correct answer from the options given below:

A. $A-I, B-III, C-IV, D-II$
B. $A-III, B-I, C-IV, D-II$
C. $A-III, B-I, C-II, D-IV$
D. $A-I, B-III, C-II, D-IV$

ugcnetcse-oct2020-paper2 algorithms

Answer key

## 1.0.5 UGC NET CSE | October 2020 | Part 2 | Question: 73 top

Match List I with List II

| | List I | | List II |
|---|---|---|---|
| $(A)$ | Greedy Best-First Search | $(I)$ | Space complexity is O(d) where d=depth of the deepest optimal solution |
| $(B)$ | $A^*$ | $(II)$ | Incomplete even if the search space is finite |
| $(C)$ | Recursive Best-First Search | $(III)$ | Optimal if optimal solution is reachable; otherwise, returns the best reachable optimal solution |
| $(D)$ | SMA* | $(IV)$ | Computation and space complexity is too high |

Choose the correct answer from the options given below:

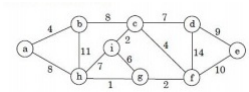
A. $A-II, B-IV, C-I, D-III$
B. $A-II, B-III, C-I, D-IV$
C. $A-III, B-II, C-IV, D-I$
D. $A-III, B-IV, C-II, D-I$

ugcnetcse-oct2020-paper2 algorithms

Answer key

## 1.0.6 UGC NET CSE | October 2020 | Part 2 | Question: 78 top

Consider the undirected graph below:




Using Prim's algorithm to construct a minimum spanning tree starting with node $a$, which one of the following sequences of edges represents a possible order in which the edges would be added to construct the minimum spanning tree?

A. $(a,b),(a,h),(g,h),(f,g),(c,f),(c,i),(c,d),(d,e)$
B. $(a,b),(b,h),(g,h),(g,i),(c,i),(c,f),(c,d),(d,e)$
C. $(a,b),(b,c),(c,i),(c,f),(f,g),(g,h),(c,d),(d,e)$
D. $(a,b),(g,h),(g,f),(c,f),(c,i),(f,e),(b,c),(d,e)$

ugcnetcse-oct2020-paper2 algorithms

Answer key

## 1.0.7 UGC NET CSE | July 2018 | Part 2 | Question: 27 top

Match the following with respect to algorithm paradigms :

| | List-I | | List-II |
|---|---|---|---|
| (a) | The 8-Queen's problem | (i) | Dynamic programming |
| (b) | Single-Source shortest paths | (ii) | Divide and Conquer |
| (c) | STRASSEN's Matrix multiplication | (iii) | Greedy approach |
| (d) | Optimal Binary search trees | (iv) | Back tracking |

**Code :**

A. (a)-(iv), (b)-(i), (c)-(iii), (d)-(ii)
B. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)
C. (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)
D. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

ugcnetcse-july2018-paper2 algorithms

Answer key

## 1.0.8 UGC NET CSE | October 2020 | Part 2 | Question: 90 top

Given below are two statements:

Statement $I$: A genetic algorithm is a stochastic hill-climbing search in which a large population of states is maintained

Statement $II$: In nondeterministic environments, agents can apply AND-OR search to generate contingent plans that reach the goal regardless of which outcomes occur during execution.

In the light of the above statements, choose the correct answer from the options given below

A. Both Statement $I$ and Statement $II$ are true
B. Both Statement $I$ and Statement $II$ are false
C. Statement $I$ is correct but Statement $II$ is false
D. Statement $I$ is incorrect but Statement $II$ is true

ugcnetcse-oct2020-paper2 algorithms

Answer key

## 1.0.9 UGC NET CSE | July 2018 | Part 2 | Question: 30 top

Consider a Boolean function of 'n' variables. The order of an algorithm that determines whether the Boolean function produces a output 1 is

A. Logarithmic
B. Linear
C. Quadratic
D. Exponential

ugcnetcse-july2018-paper2 algorithms

Answer key

## 1.0.10 UGC NET CSE | January 2017 | Part 3 | Question: 36 top

Match the following with respect to algorithm paradigms :

| | List-I | | List-II |
|---|---|---|---|
| a. | Merge sort | i. | Dynamic programming |
| b. | Huffman coding | ii. | Greedy approach |
| c. | Optimal polygon triangulation | iii. | Divide and conquer |
| d. | Subset sum problem | iv. | Back tracking |

**Codes :**

A. a-iii, b-i, c-ii, d-iv
B. a-ii, b-i, c-iv, d-iii
C. a-ii, b-i, c-iii, d-iv
D. a-iii, b-ii, c-i, d-iv

ugcnetcse-jan2017-paper3 algorithms

Answer key

### 1.0.11 UGC NET CSE | August 2016 | Part 3 | Question: 36 top

Match the following :

| | | | |
|---|---|---|---|
| a. | Prim's algorithm | i. | $O(V^2E)$ |
| b. | Bellman-Ford algorithm | ii. | $O(VElgV)$ |
| c. | Floyd-Warshall algorithm | iii. | $O(ElgV)$ |
| d. | Johnson's algorithm | iv. | $O(V^3)$ |

where $V$ is the set of nodes and $E$ is the set of edges in the graph.

**Codes :**

A. a-i, b-iii, c-iv, d-ii
B. a-i, b-iii, c-ii, d-iv
C. a-iii, b-i, c-iv, d-ii
D. a-iii, b-i, c-ii, d-iv

ugcnetcse-aug2016-paper3 algorithms

Answer key

### 1.0.12 UGC NET CSE | June 2013 | Part 3 | Question: 68 top

Which one of the following is not an informed search technique?

A. Hill climbing search
B. Best first search
C. A* search
D. Depth first search

ugcnetcse-june2013-paper3 algorithms

Answer key

### 1.0.13 UGC NET CSE | September 2013 | Part 3 | Question: 40 top

The time complexity of an efficient algorithm to find the longest monotonically increasing subsequence of n numbers is

A. O(n)
B. O(n lg n)
C. O($n^2$)
D. None of the above

algorithms ugcnetcse-sep2013-paper3

Answer key

### 1.0.14 UGC NET CSE | June 2012 | Part 2 | Question: 2 top

The post order traversal of a binary tree is DEBFCA. Find out the pre-order traversal

A. ABFCDE
B. ADBFEC
C. ABDECF
D. None of the above

ugcnetcse-june2012-paper2 algorithms

Answer key

## 1.1 Activity Selection Problem (1) top

### 1.1.1 Activity Selection Problem: UGC NET CSE | December 2015 | Part 3 | Question: 16 top

In Activity-Selection problem, each activity $i$ has a start time $s_i$ and a finish time $f_i$ where $s_i \leq f_i$. Activities $i$ and $j$ are compatible if

A. $s_i \geq f_j$
B. $s_j \geq f_i$
C. $s_i \geq f_j$ or $s_j \geq f_i$
D. $s_i \geq f_j$ and $s_j \geq f_i$

ugcnetcse-dec2015-paper3 algorithms activity-selection-problem

Answer key

## 1.2 Algorithm Design Techniques (1) top

### 1.2.1 Algorithm Design Techniques: UGC NET CSE | December 2006 | Part 2 | Question: 22 top

Binary search tree is an example of :

A. Divide and conquer technique
B. Greedy algorithm
C. Back tracking
D. Dynamic Programming

ugcnetcse-dec2006-paper2 algorithms algorithm-design-techniques

Answer key

## 1.3 Algorithm Efficiency (1) top

### 1.3.1 Algorithm Efficiency: UGC NET CSE | Junet 2015 | Part 2 | Question: 25 top

To determine the efficiency of an algorithm the time factor is measured by

A. Counting micro seconds
B. Counting number of key operations
C. Counting number of statements
D. Counting kilobytes of algorithm

ugcnetcse-june2015-paper2 algorithm-efficiency

Answer key

## 1.4 Algorithms Sorting (1) top

### 1.4.1 Algorithms Sorting: UGC NET CSE | Junet 2015 | Part 2 | Question: 48 top

Which of the following algorithms sort $n$ integers, having the range $0$ to $(n^2-1)$, in ascending order in $O(n)$ time?

A. Selection sort
B. Bubble sort
C. Radix sort
D. Insertion sort

ugcnetcse-june2015-paper2 algorithms-sorting

Answer key

## 1.5 Array (2) top

### 1.5.1 Array: UGC NET CSE | January 2017 | Part 2 | Question: 21 top

Which of the following is true for computation time in insertion, deletion and finding maximum and minimum element in a sorted array ?

A. Insertion – $0(1)$, Deletion – $0(1)$, Maximum – $0(1)$, Minimum – $0(1)$
B. Insertion – $0(1)$, Deletion – $0(1)$, Maximum – $0(n)$, Minimum – $0(n)$
C. Insertion – $0(n)$, Deletion – $0(n)$, Maximum – $0(1)$, Minimum – $0(1)$
D. Insertion – $0(n)$, Deletion – $0(n)$, Maximum – $0(n)$, Minimum – $0(n)$

ugcnetjan2017ii algorithms array

Answer key

### 1.5.2 Array: UGC NET CSE | June 2016 | Part 3 | Question: 32 top

Let $A[1,\ldots,n]$ be an array of n distinct numbers. If $i<j$ and $A[i]>A[j]$, then the pair $(i,j)$ is called an inversion of $A$. What is the expected number of inversions in any permutation on $n$ elements?

A. $\theta(n)$
B. $\theta(lgn)$
C. $\theta(nlgn)$
D. $\theta(n^2)$

ugcnetcse-june2016-paper3 algorithms array

Answer key

## 1.6 Artificial Intelligence (2) top

### 1.6.1 Artificial Intelligence: UGC NET CSE | June 2014 | Part 3 | Question: 31 top

Consider $f(N)=g(N)+h(N)$ Where function $g$ is a measure of the cost of getting from the start node to

the current node. $N$ and $h$ is an estimate of the additional cost of getting from the current node $N$ to the goal node. Then $f(N) = h(N)$ is used in which one of the following algorithms?

A. $A^*$algorithm
B. $AO^*$ algorithm
C. Greedy best first search algorithm
D. Iterative $A^*$ algorithm

ugcnetjune2014iii artificial-intelligence algorithms

Answer key

### 1.6.2 Artificial Intelligence: UGC NET CSE | June 2014 | Part 3 | Question: 33 top

_____ is used in game trees to reduce the number of branches of the search tree to be traversed without affecting the solution.

A. Best first search
B. Goal stack planning
C. Alpha-beta pruning procedure
D. Min-max search

ugcnetjune2014iii artificial-intelligence algorithms

Answer key

## 1.7 Asymptotic Notations (8) top

### 1.7.1 Asymptotic Notations: UGC NET CSE | December 2013 | Part 2 | Question: 35 top

Big-O estimate for $f(x) = (x+1)\log(x^2+1) + 3x^2$ is given as

A. $O(x \log x)$
B. $O(x^2)$
C. $O(x^3)$
D. $O(x^2 \log x)$

ugcnetcse-dec2013-paper2 asymptotic-notations

Answer key

### 1.7.2 Asymptotic Notations: UGC NET CSE | December 2013 | Part 3 | Question: 35 top

Let $A$ and $B$ be two $n \times n$ matrices. The efficient algorithm to multiply the two matrices has the time complexity

A. $O(n^3)$
B. $O(n^{2.81})$
C. $O(n^{2.67})$
D. $O(n^2)$

ugcnetcse-dec2013-paper3 algorithms asymptotic-notations

Answer key

### 1.7.3 Asymptotic Notations: UGC NET CSE | December 2013 | Part 3 | Question: 36 top

The recurrence relation $T(n) = mT(\frac{n}{2}) + tan^2$ is satisfied by

A. O($n^2$)
B. O($n^{lg\, m}$)
C. O($n^2\ lg\, n$)
D. O(n lg n)

ugcnetcse-dec2013-paper3 algorithms asymptotic-notations recurrence-relation

Answer key

### 1.7.4 Asymptotic Notations: UGC NET CSE | January 2017 | Part 3 | Question: 31 top

The asymptotic upper bound solution of the recurrence relation given by $T(n) = 2T\left(\frac{n}{2}\right) + \frac{n}{\lg\ n}$ is

A. $O(n^2)$
B. $O(n\ \lg\ n)$
C. $O(n\ \lg\ \lg\ n)$
D. $O(\lg\ \lg\ n)$

ugcnetcse-jan2017-paper3 algorithms asymptotic-notations recurrence-relation

Answer key

### 1.7.5 Asymptotic Notations: UGC NET CSE | June 2014 | Part 2 | Question: 24 top

Big-$O$ estimates for the factorial function and the logarithm of the factorial function i.e. $n!$ and $\log n!$ is given by

A. $O(n!)$ and $O(n \log n)$
B. $O(n^n)$ and $O(n \log n)$

C. $O(n!)$ and $O(\log n!)$

D. $O(n^n)$ and $O(\log n!)$

ugcnetcse-june2014-paper2 algorithms time-complexity asymptotic-notations

Answer key

### 1.7.6 Asymptotic Notations: UGC NET CSE | June 2014 | Part 2 | Question: 39 top

An algorithm is made up of $2$ modules $M_1$ and $M_2$ . If time complexity of modules $M_1$ and $M_2$ are $h(n)$ and $g(n)$ respectively, the time complexity of the algorithm is

A. $\min(h(n), g(n))$

B. $\max(h(n), g(n))$

C. $h(n) + g(n)$

D. $h(n) * g(n)$

ugcnetcse-june2014-paper2 algorithms time-complexity asymptotic-notations

Answer key

### 1.7.7 Asymptotic Notations: UGC NET CSE | June 2014 | Part 3 | Question: 61 top

Given the following equalities : $E_1 : n^{K+\in} + n^K \lg n = \theta(n^{K+\in})$ for all fixed $K$ and $\in, K \geq 0$ and $\in > 0$. $E_2 : n^3 2^n + 6n^2 3^n = O(n^3 2^n)$. Which of the following is true ?

1. $E_1$ is correct and $E_2$ is correct.
2. $E_1$ is correct and $E_2$ is not correct.
3. $E_1$ is not correct and $E_2$ is correct.
4. $E_1$ is not correct and $E_2$ is not correct.

asymptotic-notations ugcnetjune2014iii

Answer key

### 1.7.8 Asymptotic Notations: UGC NET CSE | Junet 2015 | Part 3 | Question: 35 top

Let $f(n)$ and $g(n)$ be asymptotically non-negative functions. Which of the following is correct?

A. $\theta(f(n)^* g(n)) = min(f(n), g(n))$

B. $\theta(f(n)^* g(n)) = max(f(n), g(n))$

C. $\theta(f(n) + g(n)) = min(f(n), g(n))$

D. $\theta(f(n) + g(n)) = max(f(n), g(n))$

asymptotic-notations algorithms ugcnetcse-june2015-paper3

Answer key

## 1.8 B Tree (2) top

### 1.8.1 B Tree: UGC NET CSE | December 2010 | Part 2 | Question: 21 top

What is the maximum number of nodes in a B-tree of order $10$ of depth $3$ (root at depth $0$) ?

A. $111$

B. $999$

C. $9999$

D. None of the above

ugcnetcse-dec2010-paper2 algorithms b-tree

Answer key

### 1.8.2 B Tree: UGC NET CSE | December 2013 | Part 2 | Question: 24 top

For any B-tree of minimum degree t $\geq$ 2, every node other than the root must have at least ____ keys and every node can have at most ____ keys.

A. t-1, 2t+1

B. t+1, 2t+1

C. t-1, 2t-1

D. t+1, 2t-1

ugcnetcse-dec2013-paper2 algorithms b-tree

Answer key

## 1.9 Binary Search Tree (1) top

### 1.9.1 Binary Search Tree: UGC NET CSE | January 2017 | Part 2 | Question: 25 top

Which of the following statements is false?

a. Optimal binary search tree can be constructed in time $O(n^2)$ using dynamic programming.

A. a B. b C. c D. d

ugcnetjan2017ii algorithms binary-tree binary-search-tree

Answer key

## 1.10 Binary Tree (4) top

### 1.10.1 Binary Tree: UGC NET CSE | December 2010 | Part 2 | Question: 22 top

A binary tree with $27$ nodes has _____ null branches.

A. $54$ B. $27$ C. $26$ D. None of the above

ugcnetcse-dec2010-paper2 algorithms binary-tree

Answer key

### 1.10.2 Binary Tree: UGC NET CSE | December 2011 | Part 2 | Question: 19 top

The post order traversal of a binary tree is DEBFCA. Find out the preorder traversal.

A. ABFCDE B. ADBFEC C. ABDECF D. ABDCEF

ugcnetcse-dec2011-paper2 algorithms binary-tree

Answer key

### 1.10.3 Binary Tree: UGC NET CSE | December 2011 | Part 2 | Question: 50 top

The number of nodes in a complete binary tree of height $h$ (with roots at level $0$) is equal to

A. $2^0 + 2^1 + \ldots\ldots 2^h$
B. $2^0 + 2^1 + \ldots\ldots 2^{h-1}$
C. $2^0 + 2^1 + \ldots\ldots 2^{h+1}$
D. $2^1 + \ldots\ldots 2^{h+1}$

ugcnetcse-dec2011-paper2 algorithms binary-tree

Answer key

### 1.10.4 Binary Tree: UGC NET CSE | December 2014 | Part 2 | Question: 25 top

A full binary tree with $n$ leaves contains

A. $n$ nodes
B. $\log_2 n$ nodes
C. $2n-1$ nodes
D. $2^n$ nodes

ugcnetcse-dec2014-paper2 algorithms binary-tree

Answer key

## 1.11 Decision Tree (1) top

### 1.11.1 Decision Tree: UGC NET CSE | December 2014 | Part 3 | Question: 31 top

Any decision tree that sorts $n$ elements has height

A. $\Omega(n)$ B. $\Omega(\lg n)$ C. $\Omega(n \lg n)$ D. $\Omega(n^2)$

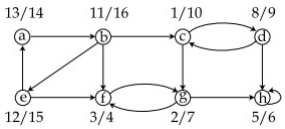
ugcnetcse-dec2014-paper3 algorithms decision-tree

Answer key

## 1.12 Depth First Search (2) top

### 1.12.1 Depth First Search: UGC NET CSE | December 2015 | Part 2 | Question: 36 top

In the following graph, discovery time stamps and finishing time stamps of Depth First Search (DFS) are shown as $x/y$, where $x$ is discovery time stamp and $y$ is finishing time stamp.




It shows which of the following depth first forest?

A. {a,b,e} {c,d,f,g,h}
B. {a,b,e} {c,d,h} {f,g}
C. {a,b,e} {f,g} {c,d} {h}
D. {a,b,c,d} {e,f,g} {h}

ugcnetcse-dec2015-paper2 algorithms depth-first-search

Answer key

### 1.12.2 Depth First Search: UGC NET CSE | June 2019 | Part 2 | Question: 65 top

Which of the following is application of depth-first search?

A. Only topological sort
B. Only strongly connected components
C. Both topological sort and strongly connected components
D. Neither topological sort nor strongly connected components

ugcnetcse-june2019-paper2 depth-first-search

Answer key

## 1.13 Dijkstras Algorithm (1) top

### 1.13.1 Dijkstras Algorithm: UGC NET CSE | January 2017 | Part 3 | Question: 35 top

Dijkstra's algorithm is based on

A. Divide and conquer paradigm
B. Dynamic programming
C. Greedy approach
D. Backtracking paradigm

ugcnetcse-jan2017-paper3 algorithms dijkstras-algorithm

Answer key

## 1.14 Double Hashing (1) top

### 1.14.1 Double Hashing: UGC NET CSE | June 2019 | Part 2 | Question: 66 top

Consider double hashing of the form

$h(k,i) = (h_1(k) + ih_2(k)) \bmod \mathrm{m}$ where $h_1(k) = \mathrm{k} \bmod \mathrm{m}$ , $h_2(k) = 1 + (\mathrm{k} \bmod \mathrm{n})$ where $n = m - 1$ and $m = 701$. For $k = 123456$, what is the difference between first and second probes in terms of slots?

A. $255$
B. $256$
C. $257$
D. $258$

ugcnetcse-june2019-paper2 double-hashing

Answer key

## 1.15 Dynamic Programming (3) top

### 1.15.1 Dynamic Programming: UGC NET CSE | August 2016 | Part 3 | Question: 31 top

Consider the problem of a chain <$A_1, A_2, A_3, A_4$> of four matrices. Suppose that the dimensions of the matrices $A_1, A_2, A_3$ and $A_4$ are $30 \times 35, 35 \times 15, 15 \times 5$ and $5 \times 10$ respectively. The minimum number of scalar multiplications needed to compute the product $A_1A_2A_3A_4$ is ____.

A. $14875$
B. $21000$
C. $9375$
D. $11875$

ugcnetcse-aug2016-paper3 algorithms dynamic-programming numerical-answers matrix

Answer key

### 1.15.2 Dynamic Programming: UGC NET CSE | December 2013 | Part 3 | Question: 37 top

The longest common subsequence of the sequences $X =< A, B, C, B, D, A, B >$ and $Y =< B, D, C, A, B, A >$ has length

A. $2$ B. $3$ C. $4$ D. $5$

ugcnetcse-dec2013-paper3 algorithms dynamic-programming

Answer key

### 1.15.3 Dynamic Programming: UGC NET CSE | June 2016 | Part 3 | Question: 36 top

A triangulation of a polygon is a set of $T$ chords that divide the polygon into disjoint triangles. Every triangulation of $n$ vertex convex polygon has ____ chords and divides the polygon into ____ triangles

A. $n-2, n-1$ B. $n-3, n-2$ C. $n-1, n$ D. $n-2, n-2$

ugcnetcse-june2016-paper3 algorithms dynamic-programming

Answer key

## 1.16 Graph Algorithms (2) top

### 1.16.1 Graph Algorithms: UGC NET CSE | December 2015 | Part 3 | Question: 20 top

Floyd-Warshall algorithm utilizes _____ to solve the all-pairs shortest paths problem on a directed graph in ____ time

A. Greedy algorithm, $\theta(V^3)$
B. Greedy algorithm, $\theta(V^2 lgn)$
C. Dynamic programming, $\theta(V^3)$
D. Dynamic programming, $\theta(V^2 lgn)$

ugcnetcse-dec2015-paper3 graph-algorithms algorithms

Answer key

### 1.16.2 Graph Algorithms: UGC NET CSE | June 2019 | Part 2 | Question: 61 top

Match List-I with List-II:

| | List-I | | List-II |
|---|---|---|---|
| $(a)$ | Prim's algorithm | $(i)$ | $O(V^3 \log V)$ |
| $(b)$ | Dijkstra's algorithm | $(ii)$ | $O(VE^2)$ |
| $(c)$ | Faster all-pairs shortest path | $(iii)$ | $O(ElgV)$ |
| $(d)$ | Edmonds-Karp algorithm | $(iv)$ | $O(V^2)$ |

Choose the correct option from those options given below:

A. (a) – (ii); (b)-(iv); (c)-(i); (d)-(iii)
B. (a) – (iii); (b)-(iv); (c)-(i); (d)-(ii)
C. (a) – (ii); (b)-(i); (c)-(iv); (d)-(iii)
D. (a) – (iii); (b)-(i); (c)-(iv); (d)-(ii)

ugcnetcse-june2019-paper2 graph-algorithms

Answer key

## 1.17 Greedy Algorithms (1) top

### 1.17.1 Greedy Algorithms: UGC NET CSE | Junet 2015 | Part 3 | Question: 64 top

Given the symbols A, B, C, D, E, F, G and H with the probabilities $\frac{1}{30}, \frac{1}{30}, \frac{1}{30}, \frac{2}{30}, \frac{3}{30}, \frac{5}{30}, \frac{5}{30}$ and $\frac{12}{30}$ respectively. The average Huffman code size in bits per symbol is

A. $\frac{67}{30}$ B. $\frac{70}{34}$ C. $\frac{76}{30}$ D. $\frac{78}{30}$

ugcnetcse-june2015-paper3 algorithms greedy-algorithms huffman-code

Answer key

## 1.18 Heap (1) top

### 1.18.1 Heap: UGC NET CSE | December 2012 | Part 3 | Question: 51 top

Suppose there are $\log_n$ sorted lists of $n \log_n$ element each. The time complexity of producing a sorted list of all these elements is (use heap data structure)

A. $O(n \log \log_n)$
B. $\theta(n \log_n)$
C. $\Omega(n \log_n)$
D. $\Omega(n^{3/2})$

ugcnetcse-dec2012-paper3 algorithms time-complexity heap

Answer key

## 1.19 Huffman Code (2) top

### 1.19.1 Huffman Code: UGC NET CSE | June 2016 | Part 3 | Question: 34 top

Match the following :

| | | | |
|---|---|---|---|
| (a) | Huffman Code | (i) | $O(n^2)$ |
| (b) | Optical Polygon Triangulation | (ii) | $\theta(n^2)$ |
| (c) | Activity Selection Problem | (iii) | $O(n \lg n)$ |
| (d) | Quicksort | (iv) | $\theta(n)$ |

**Codes :**

A. (a)-(i), (b)-(ii), (c)-(iv), (d)-(iii)
B. (a)-(i), (b)-(iv), (c)-((ii), (d)-(iii)
C. (a)-(iii), (b)-(ii), (c)-(iv), (d)-(i)
D. (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)

ugcnetcse-june2016-paper3 algorithms huffman-code

Answer key

### 1.19.2 Huffman Code: UGC NET CSE | June 2016 | Part 3 | Question: 59 top

Consider a source with symbols $A, B, C, D$ with probabilities $1/2, 1/4, 1/8, 1/8$ respectively. What is the average number of bits per symbol for the Huffman code generated from above information?

A. $2$ bits per symbol
B. $1.75$ bits per symbol
C. $1.50$ bits per symbol
D. $1.25$ bits per symbol

ugcnetcse-june2016-paper3 algorithms huffman-code probability

Answer key

## 1.20 In Place Algo (1) top

### 1.20.1 In Place Algo: UGC NET CSE | June 2019 | Part 2 | Question: 62 top

There are many sorting algorithms based on comparison. The running time of heapsort algorithm is $O(n \lg n)$. Like $P$, but unlike $Q$, heapsort sorts in place where $(P, Q)$ is equal to

A. Merge sort, Quick sort
B. Quick sort, insertion sort
C. Insertion sort, Quick sort
D. Insertion sort, Merge sort

ugcnetcse-june2019-paper2 in-place-algo quicksort-mergesort-insertion-sort

Answer key

## 1.21 Knapsack Problem (2) top

### 1.21.1 Knapsack Problem: UGC NET CSE | June 2014 | Part 3 | Question: 62 top

Consider the fractional knapsack instance

$n = 4, (p_1, p_2, p_3, p_4) = (10, 10, 12, 18), (w_1, w_2, w_3, w_4) = (2, 4, 6, 9)$ and $M = 15$.

The maximum profit is given by (Assume $p$ and $w$ denotes profit and weight of objects respectively)

A. $40$ B. $38$ C. $32$ D. $30$

ugcnetjune2014iii algorithms greedy-algorithm knapsack-problem

Answer key

### 1.21.2 Knapsack Problem: UGC NET CSE | September 2013 | Part 3 | Question: 42 top

Given 0-1 knapsack problem and fractional knapsack problem and the following statements:

$S_1$: 0-1 knapsack is efficiently solved using Greedy algorithm.

$S_2$: Fractional knapsack is efficiently solved using Dynamic programming.

Which of the following is true?

A. $S_1$ is correct and $S_2$ is not correct
B. Both $S_1$ and $S_2$ are correct
C. Both $S_1$ and $S_2$ are not correct
D. $S_1$ is not correct and $S_2$ is correct

ugcnetcse-sep2013-paper3 algorithms knapsack-problem

Answer key

## 1.22 Linear Search (1) top

### 1.22.1 Linear Search: UGC NET CSE | Junet 2015 | Part 2 | Question: 24 top

The average case occurs in Linear Search Algorithm when

A. The item to be searched is in some where middle of the Array
B. The item to be searched is not in the array
C. The item to be searched is in the last of t he array
D. The item to be searched is either in the last or not in the array

ugcnetcse-june2015-paper2 algorithms linear-search

Answer key

## 1.23 Longest Common Subsequence (1) top

### 1.23.1 Longest Common Subsequence: UGC NET CSE | December 2015 | Part 3 | Question: 17 top

Given two sequences $X$ and $Y$:

$X = \langle a, b, c, b, d, a, b \rangle$

$Y = \langle b, d, c, a, b, a \rangle$

The longest common subsequence of X and Y is:

A. $\langle b, c, a \rangle$
B. $\langle c, a, b \rangle$
C. $\langle b, c, a, a \rangle$
D. $\langle b, c, b, a \rangle$

ugcnetcse-dec2015-paper3 algorithms longest-common-subsequence

Answer key

## 1.24 Matrix Chain Ordering (3) top

### 1.24.1 Matrix Chain Ordering: UGC NET CSE | December 2014 | Part 3 | Question: 35 top

Consider the problem of a chain $\langle A_1, A_2, A_3 \rangle$ of three matrices. Suppose that the dimensions of the matrices are $10 \times 100$, $100 \times 5$ and $5 \times 50$ respectively. There are two different ways of parenthesization : (i) $((A_1 A_2) A_3)$ and (ii) $(A_1 (A_2 A_3))$. Computing the product according to the first parenthesization is _____ times faster in comparison to the second parenthesization.

A. $5$ B. $10$ C. $20$ D. $100$

ugcnetcse-dec2014-paper3 algorithms matrix-chain-ordering

Answer key

### 1.24.2 Matrix Chain Ordering: UGC NET CSE | January 2017 | Part 3 | Question: 34 top

The minimum number of scalar multiplication required, for parenthesization of a matrix-chain product whose sequence of dimensions for four matrices is $< 5, 10, 3, 12, 5 >$ is

A. $630$ B. $580$ C. $480$ D. $405$

ugcnetcse-jan2017-paper3 algorithms matrix-chain-ordering

Answer key

### 1.24.3 Matrix Chain Ordering: UGC NET CSE | September 2013 | Part 3 | Question: 39 top

The number of possible paranthesizations of a sequence of n matrices is

A. O(n) B. $\theta$(n lg n) C. $\Omega(2^n)$ D. None of the above

ugcnetcse-sep2013-paper3 algorithms dynamic-programming matrix-chain-ordering

Answer key

## 1.25 Merge Sort (2) top

### 1.25.1 Merge Sort: UGC NET CSE | December 2013 | Part 2 | Question: 25 top

Given two sorted list of size 'm' and 'n' respectively. The number of comparisons needed in the worst case by the merge sort algorithm will be

A. m $\times$ n B. max(m, n) C. min(m, n) D. m+n-1

ugcnetcse-dec2013-paper2 algorithms merge-sort

Answer key

### 1.25.2 Merge Sort: UGC NET CSE | June 2014 | Part 2 | Question: 36 top

Mergesort makes two recursive calls. Which statement is true after these two recursive calls finish, but before the merge step ?

A. The array elements form a heap.
B. Elements in each half of the array are sorted amongst themselves.
C. Elements in the first half of the array are less than or equal to elements in second half of the array.
D. All of the above

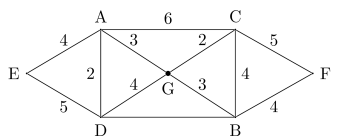
ugcnetcse-june2014-paper2 algorithms sorting merge-sort

Answer key

## 1.26 Minimum Spanning Tree (1) top

### 1.26.1 Minimum Spanning Tree: UGC NET CSE | November 2017 | Part 2 | Question: 5 top

Consider the graph given below:




Use Kruskal's algorithm to find a minimal spanning tree for the graph. The List of the edges of the tree in the order in which they are chosen is

A. AD, AE, AG, GC, GB, BF
B. GC, GB, BF, GA, AD, AE
C. GC, AD, GB, GA, BF, AE
D. AD, AG, GC, AE, GB, BF

ugcnetcse-nov2017-paper2 graph-algorithms minimum-spanning-tree

Answer key

## 1.27 Optimal Search Tree (1) top

### 1.27.1 Optimal Search Tree: UGC NET CSE | December 2015 | Part 3 | Question: 21 top

Let $n = 4$ and $(a_1, a_2, a_3, a_4)$=(do, if, int, while). Let $p(1:4) = \left(\frac{3}{8}, \frac{3}{8}, \frac{1}{8}, \frac{1}{8}\right)$ and $q(1:4) = \left(\frac{2}{8}, \frac{3}{8}, \frac{1}{8}, \frac{1}{8}, \frac{1}{8}\right)$ where $p(i)$ and $q(i)$ denotes the probability with which we search $a_i$ and the identifier $x$ being searched satisfy $a_i < x < a_{i+1}$ respectively. The optimal search tree is given by:

A

B

C

D

ugcnetcse-dec2015-paper3 algorithms optimal-search-tree

Answer key

## 1.28 Optimal Solution (1) top

### 1.28.1 Optimal Solution: UGC NET CSE | June 2019 | Part 2 | Question: 68 top

Consider the following steps:

$S_1$: Characterize the structure of an optimal solution

$S_2$: Compute the value of an optimal solution in bottom-up fashion

Which of the following step(s) is/are common to both dynamic programming and greedy algorithms?

A. Only $S_1$
B. Only $S_2$
C. Both $S_1$ and $S_2$
D. Neither $S_1$ nor $S_2$

ugcnetcse-june2019-paper2 optimal-solution dynamic-programming greedy-algorithm

Answer key

## 1.29 P Np Npc Nph (3) top

### 1.29.1 P Np Npc Nph: UGC NET CSE | December 2014 | Part 3 | Question: 33 top

We can show that the clique problem is $NP$-hard by proving that

A. CLIQUE $\leq$ P 3-CNF_SAT
B. CLIQUE $\leq$ P VERTEX_COVER
C. CLIQUE $\leq$ P SUBSET_SUM
D. None of the above

ugcnetcse-dec2014-paper3 algorithms p-np-npc-nph

Answer key

### 1.29.2 P Np Npc Nph: UGC NET CSE | June 2019 | Part 2 | Question: 67 top

Consider the complexity class $CO - NP$ as the set of languages $L$ such that $\overline{L} \in NP$, and the following two statements:

$S_1 : P \subseteq CO - NP$

$S_2 : \text{ If } NP \neq CO - NP, \text{ then } P \neq NP$

Which of the following is/are correct?

A. Only $S_1$ B. Only $S_2$ C. Both $S_1$ and $S_2$ D. Neither $S_1$ nor $S_2$

ugcnetcse-june2019-paper2 p-np-npc-nph

Answer key

### 1.29.3 P Np Npc Nph: UGC NET CSE | Junet 2015 | Part 3 | Question: 32 top

The travelling salesman problem can be solved in

A. Polynomial time using dynamic programming algorithm
B. Polynomial time using branch-and-bound algorithm
C. Exponential time using dynamic programming algorithm or branch-and-bound algorithm
D. Polynomial time using back tracking algorithm

algorithms p-np-npc-nph ugcnetcse-june2015-paper3

Answer key

## 1.30 Quick Sort (1) top

### 1.30.1 Quick Sort: UGC NET CSE | June 2014 | Part 3 | Question: 66 top

Suppose that the splits at every level of quicksort are in the proportion $(1-\alpha)$ to $\alpha$, where $0 < \alpha \leq \frac{1}{2}$ is a constant. The minimum depth of a leaf in the recursion tree is approximately given by

A. $-\frac{lgn}{lg(1-\alpha)}$
B. $-\frac{lg(1-\alpha)}{lgn}$
C. $-\frac{lgn}{lg\alpha}$
D. $-\frac{lg\alpha}{lgn}$

ugcnetjune2014iii data-structures sorting algorithms quick-sort

Answer key

## 1.31 Recurrence Relation (7) top

### 1.31.1 Recurrence Relation: UGC NET CSE | December 2012 | Part 3 | Question: 14 top

Let $T(n)$ be a function defined by $T(n) = 1$ and $T(n) = 2T(n/2) + \sqrt{n}$, which of the following is true?

A. $T(n) = O(\sqrt{n})$
B. $T(n) = O(\log_2 n)$
C. $T(n) = O(n)$
D. $T(n) = O(n^2)$

ugcnetcse-dec2012-paper3 algorithms recurrence-relation time-complexity

Answer key

### 1.31.2 Recurrence Relation: UGC NET CSE | December 2015 | Part 3 | Question: 19 top

The solution of the reccurence relation

$$T(n) \leq \begin{cases} \theta(1) & \text{if } n \leq 80 \\ T\left(\frac{n}{s}\right) + T\left(\frac{7n}{10} + 6\right) + O(n) & \text{if } n > 80 \end{cases}$$ is

A. $O(\lg n)$ B. $O(n)$ C. $O(n \lg n)$ D. None of the above

ugcnetcse-dec2015-paper3 algorithms recurrence-relation

Answer key

### 1.31.3 Recurrence Relation: UGC NET CSE | December 2018 | Part 2 | Question: 21 top

The solution of recurrence relation:

$T(n) = 2T(\sqrt{n}) + \lg(n)$ is

A. $O(\lg(n))$
B. $O(n \lg(n))$
C. $O(\lg(n) \lg(n))$
D. $O(\lg(n) \lg(\lg(n)))$

ugcnetcse-dec2018-paper2 recurrence-relation

Answer key

### 1.31.4 Recurrence Relation: UGC NET CSE | July 2018 | Part 2 | Question: 21 top

The solution of the recurrence relation $T(m) = T(3m/4) + 1$ is

A. $\Theta(\lg\ m)$
B. $\Theta(m)$
C. $\Theta(m \lg m)$
D. $\Theta(\lg \lg m)$

ugcnetcse-july2018-paper2 algorithms time-complexity recurrence-relation

Answer key

### 1.31.5 Recurrence Relation: UGC NET CSE | June 2013 | Part 3 | Question: 12 top

The solution of recurrence relation, $T(n) = 2T(floor(\sqrt{n})) + \log n$ is

A. $O(n \log \log \log n)$
B. $O(n \log \log n)$
C. $O(\log \log n)$
D. $O(\log n \log \log n)$

ugcnetcse-june2013-paper3 algorithms recurrence-relation

Answer key

### 1.31.6 Recurrence Relation: UGC NET CSE | June 2014 | Part 3 | Question: 63 top

The solution of the recurrence relation of $T(n) = 3T\left(floor\left(\frac{n}{4}\right)\right) + n$ is

A. $O(n^2)$
B. $O(n/gn)$
C. $O(n)$
D. $O(lgn)$

ugcnetjune2014iii algorithms recurrence-relation

Answer key

### 1.31.7 Recurrence Relation: UGC NET CSE | September 2013 | Part 3 | Question: 37 top

The time complexity of reccurence relation T(n) = T(n/3) + T(2n/3) +O(n) is

A. O(lg n)
B. O(n)
C. O(n lg n)
D. O($n^2$)

ugcnetcse-sep2013-paper3 algorithms time-complexity recurrence-relation

Answer key

## 1.32 Recursion (2) top

### 1.32.1 Recursion: UGC NET CSE | December 2009 | Part 2 | Question: 11 top

Recursive functions are executed in a

(A) First in first out-order

(B) Last in first out-order

(C) Parallel fashion

(D) Load balancing

ugcnetcse-dec2009-paper2 algorithms recursion

Answer key

### 1.32.2 Recursion: UGC NET CSE | December 2011 | Part 2 | Question: 3 top

Which of the following is a bad example of recursion ?

A. Factorial
B. Fibonacci numbers
C. Tower of Hanai
D. Tree traversal

ugcnetcse-dec2011-paper2 algorithms recursion

Answer key

## 1.33 Red Black Tree (1) top

### 1.33.1 Red Black Tree: UGC NET CSE | January 2017 | Part 3 | Question: 33 top

Red-black trees are one of many search tree schemes that are “balanced” in order to guarantee that basic dynamic-set operations take _____ time in the worst case.

A. $O(1)$ B. $O(\lg n)$ C. $O(n)$ D. $O(n \lg n)$

ugcnetcse-jan2017-paper3 algorithms red-black-tree

Answer key

## 1.34 Shortest Path (2) top

### 1.34.1 Shortest Path: UGC NET CSE | December 2014 | Part 3 | Question: 34 top

Dijkstra algorithm, which solves the single-source shortest--paths problem, is a _____, and the Floyd-Warshall algorithm, which finds shortest paths between all pairs of vertices, is a _____.

A. Greedy algorithm, Divide-conquer algorithm
B. Divide-conquer algorithm, Greedy algorithm
C. Greedy algorithm, Dynamic programming algorithm
D. Dynamic programming algorithm, Greedy algorithm

ugcnetcse-dec2014-paper3 algorithms shortest-path

Answer key

### 1.34.2 Shortest Path: UGC NET CSE | Junet 2015 | Part 3 | Question: 31 top

An all-pairs shortest-paths problem is efficiently solved using:

A. Dijkstra's algorithm
B. Bellman-Ford algorithm
C. Kruskal algorithm
D. Floyd-Warshall algorithm

ugcnetcse-june2015-paper3 algorithms shortest-path

Answer key

## 1.35 Sorting (4) top

### 1.35.1 Sorting: UGC NET CSE | December 2013 | Part 3 | Question: 38 top

Assuming there are n keys and each key is in the range [0, m-1]. The run time of bucket sort is

A. O(n) B. O(n lgn) C. O(n lgm) D. O(n+m)

ugcnetcse-dec2013-paper3 algorithms sorting

Answer key

### 1.35.2 Sorting: UGC NET CSE | December 2014 | Part 2 | Question: 22 top

You have to sort a list $L$, consisting of a sorted list followed by a few ‘random’ elements. Which of the following sorting method would be most suitable for such a task ?

A. Bubble sort
B. Selection sort
C. Quick sort
D. Insertion sort

ugcnetcse-dec2014-paper2 algorithms data-structures sorting

Answer key

### 1.35.3 Sorting: UGC NET CSE | December 2015 | Part 3 | Question: 18 top

If there are n integers to sort, each integer had d digits and each digit is in the set$\{1, 2, \ldots, k\}$, radix sort can sort the numbers in

A. $O(d\,n\,k)$ B. $O(dn^k)$ C. $O(d+n)k)$ D. $O(d(n+k))$

ugcnetcse-dec2015-paper3 algorithms sorting

Answer key

### 1.35.4 Sorting: UGC NET CSE | June 2019 | Part 2 | Question: 64 top

Which of the following is best running time to sort $n$ integers in the range $0$ to $n^2 - 1$?

A. $O(\lg n)$ B. $O(n)$ C. $O(n \lg n)$ D. $O(n^2)$

ugcnetcse-june2019-paper2 sorting

Answer key

## 1.36 Space Complexity (1) top

### 1.36.1 Space Complexity: UGC NET CSE | December 2015 | Part 2 | Question: 39 top

An ideal sort is an in-place-sort whose additional space requirement is

A. O ($\log_2$ n) B. O (n$\log_2$ n) C. O (1) D. O (n)

ugcnetcse-dec2015-paper2 algorithms sorting space-complexity

Answer key

## 1.37 Time Complexity (7) top

### 1.37.1 Time Complexity: UGC NET CSE | December 2010 | Part 2 | Question: 23 top

The time complexity to build a heap of n elements is

A. $0(1)$ B. $0(lgn)$ C. $0(n)$ D. $0(nlgn)$

ugcnetcse-dec2010-paper2 algorithms time-complexity

Answer key

### 1.37.2 Time Complexity: UGC NET CSE | December 2012 | Part 3 | Question: 11 top

The time complexities of some standard graph algorithms are given. Match each algorithm with its time complexity ? ($n$ and $m$ are no. of nodes and edges respectively)

| | | | |
|---|---|---|---|
| a. | Bellman Ford algorithm | i. | $O(m \log n)$ |
| b. | Kruskals algorithm | ii. | $O(n^3)$ |
| c. | Floyd Warshall algorithm | iii. | $O(mn)$ |
| d. | Topological sorting | iv. | $O(n+m)$ |

**Codes :**

A. a-iii, b-i, c-ii, d-iv
B. a-ii, b-iv, c-iii, d-i
C. a-iii, b-iv, c-i, d-ii
D. a-ii, b-i, c-iii, d-iv

ugcnetcse-dec2012-paper3 algorithms time-complexity

Answer key

### 1.37.3 Time Complexity: UGC NET CSE | December 2014 | Part 3 | Question: 32 top

Match the following :

| | **List – I** | | **List – II** |
|---|---|---|---|
| a. | Bucket sort | i. | $O(n^3 \lg n)$ |
| b. | Matrix chain multiplication | ii. | $O(n^3)$ |
| c. | Huffman codes | iii. | $O(n \lg n)$ |
| d. | All pairs shortest paths | iv. | $O(n)$ |

**Codes :**

A. a-iv, b-ii, c-i, d-iii
B. a-ii, b-iv, c-i, d-iii

C. a-iv, b-ii, c-iii, d-i

D. a-iii, b-ii, c-iv, d-i

ugcnetcse-dec2014-paper3 algorithms time-complexity

Answer key

### 1.37.4 Time Complexity: UGC NET CSE | Junet 2015 | Part 3 | Question: 33 top

Which of the following is asymptotically smaller?

A. lg(lg*n)

B. lg*(lgn)

C. lg(n!)

D. lg*(n!)

algorithms ugcnetcse-june2015-paper3 time-complexity

Answer key

### 1.37.5 Time Complexity: UGC NET CSE | October 2020 | Part 2 | Question: 25 top

If algorithm $A$ and another algorithm $B$ take $\log_2(n)$ and $\sqrt{n}$ microseconds, respectively, to solve a problem, then the largest size $n$ of a problem these algorithms can solve, respectively, in one second are _____ and _____.

A. $2^{10^n}$ and $10^6$

B. $2^{10^n}$ and $10^{12}$

C. $2^{10^n}$ and $6.10^6$

D. $2^{10^n}$ and $6.10^{12}$

ugcnetcse-oct2020-paper2 algorithms time-complexity

Answer key

### 1.37.6 Time Complexity: UGC NET CSE | October 2020 | Part 2 | Question: 52 top

The running time of an algorithm is $O(g(n))$ if and only if

a. its worst-case running time is $O(g(n))$ and its best-case running time is $O(g(n))$

b. its worst-case running time is $\Omega(g(n))$ and its best-case running time is $\Omega(g(n))$

c. its worst-case running time is $\Theta(g(n))$ and its best-case running time is $\Theta(g(n))$

d. the running time is $O(g(n))$ for an empty set, $o$ is small

Choose the correct answer from the options given below:

A. $(a)$ only

B. $(b)$ only

C. $(c)$ only

D. $(d)$ only

ugcnetcse-oct2020-paper2 algorithms time-complexity

Answer key

### 1.37.7 Time Complexity: UGC NET CSE | September 2013 | Part 2 | Question: 9 top

The amortized time complexity to perform ____ operation(s) in Splay trees is O(lg n)

A. Search

B. Search and Insert

C. Search and Delete

D. Search, Insert and Delete

ugcnetsep2013ii algorithms time-complexity

Answer key

## 1.38 Tree (2) top

### 1.38.1 Tree: UGC NET CSE | December 2015 | Part 2 | Question: 37 top

The number of disk pages access in B-tree search, where h is height, n is the number of keys and t is the minimum degree, is

A. $\theta(\log_n h * t)$

B. $\theta(\log_t n * h)$

C. $\theta(\log_h n)$

D. $\theta(\log_t n)$

ugcnetcse-dec2015-paper2 algorithms tree

Answer key

### 1.38.2 Tree: UGC NET CSE | January 2017 | Part 3 | Question: 32 top

Any decision tree that sorts n elements has height ____

A. $\Omega(\lg n)$

B. $\Omega(n)$

C. $\Omega(n \lg n)$

D. $\Omega(n^2)$

ugcnetcse-jan2017-paper3 algorithms tree

Answer key

## 1.39 Tree Search Algorithm (2) top

### 1.39.1 Tree Search Algorithm: UGC NET CSE | Junet 2015 | Part 3 | Question: 58 top

Which of the following statements is true for Branch-and-Bound search?

A. Underestimates of remaining distance may cause deviation from optimal path
B. Overestimates can't cause right path to be overlooked
C. Dynamic programming principle can be used to discard redundant partial paths
D. All of the above

ugcnetcse-june2015-paper3 algorithms branch-and-bound tree-search-algorithm graph-search

Answer key

### 1.39.2 Tree Search Algorithm: UGC NET CSE | September 2013 | Part 3 | Question: 2 top

$\alpha - \beta$ cutoffs are applied to

A. Depth first search
B. Best first search
C. Minimax search
D. Breadth first search

ugcnetcse-sep2013-paper3 algorithms graph-search tree-search-algorithm

Answer key

## 1.40 Tree Traversal (1) top

### 1.40.1 Tree Traversal: UGC NET CSE | Junet 2015 | Part 2 | Question: 4 top

Consider the following statements:

a. Depth-first search is used to traverse a rooted tree
b. Pre-order, post-order and in-order are algorithms used to list the vertices of a rooted tree
c. Dijkstra's algorithm is used to find a shortest path between two vertices in a weighted graph
d. Huffman's algorithm is used to find an optimal prefix code for a given set of weights

Which one of the above statements is true?

A. a and b
B. c and d
C. a, b, and c
D. a, b, c, and d

ugcnetcse-june2015-paper2 tree tree-traversal

Answer key

## 1.41 Tree Traversals (1) top

### 1.41.1 Tree Traversals: UGC NET CSE | June 2012 | Part 3 | Question: 51 top

The strategy used to reduce the number of tree branches and the number of static evaluations applied in case of a game tree is

A. Minmax strategy
B. Alpha-beta pruning strategy
C. Constraint satisfaction strategy
D. Static max strategy

ugcnetcse-june2012-paper3 algorithms graph-search tree-traversals

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1.0.1 | Q-Q | 1.0.2 | A | 1.0.3 | A | 1.0.4 | X | 1.0.5 | A |
| 1.0.6 | A;C | 1.0.7 | Q-Q | 1.0.8 | A | 1.0.9 | Q-Q | 1.0.10 | D |
| 1.0.11 | Q-Q | 1.0.12 | D | 1.0.13 | B | 1.0.14 | C | 1.1.1 | C |
| 1.2.1 | Q-Q | 1.3.1 | B | 1.4.1 | C | 1.5.1 | C | 1.5.2 | D |
| 1.6.1 | C | 1.6.2 | C | 1.7.1 | B | 1.7.2 | B | 1.7.3 | X |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1.7.4 | C | 1.7.5 | B | 1.7.6 | B | 1.7.7 | B | 1.7.8 | D |
| 1.8.1 | Q-Q | 1.8.2 | C | 1.9.1 | B | 1.10.1 | Q-Q | 1.10.2 | Q-Q |
| 1.10.3 | Q-Q | 1.10.4 | C | 1.11.1 | C | 1.12.1 | A | 1.12.2 | C |
| 1.13.1 | C | 1.14.1 | C | 1.15.1 | Q-Q | 1.15.2 | C | 1.15.3 | B |
| 1.16.1 | A | 1.16.2 | B | 1.17.1 | C | 1.18.1 | A | 1.19.1 | C |
| 1.19.2 | B | 1.20.1 | D | 1.21.1 | B | 1.21.2 | C | 1.22.1 | A |
| 1.23.1 | B | 1.24.1 | B | 1.24.2 | D | 1.24.3 | C | 1.25.1 | D |
| 1.25.2 | B | 1.26.1 | C | 1.27.1 | C | 1.28.1 | A | 1.29.1 | D |
| 1.29.2 | C | 1.29.3 | C | 1.30.1 | C | 1.31.1 | C | 1.31.2 | C |
| 1.31.3 | D | 1.31.4 | Q-Q | 1.31.5 | D | 1.31.6 | C | 1.31.7 | C |
| 1.32.1 | Q-Q | 1.32.2 | B | 1.33.1 | B | 1.34.1 | C | 1.34.2 | D |
| 1.35.1 | D | 1.35.2 | D | 1.35.3 | D | 1.35.4 | B | 1.36.1 | C |
| 1.37.1 | Q-Q | 1.37.2 | A | 1.37.3 | C | 1.37.4 | A | 1.37.5 | B |
| 1.37.6 | X | 1.37.7 | D | 1.38.1 | D | 1.38.2 | C | 1.39.1 | C |
| 1.39.2 | C | 1.40.1 | D | 1.41.1 | B | | | | |

### 2.0.1 UGC NET CSE | June 2009 | Part 2 | Question: 09 top

With four programs in memory and with $80\%$ average $I/O$ wait, the $\text{CPU}$ utilization is ?

A. $60\%$
B. $70\%$
C. $90\%$
D. $100\%$

ugcnetcse-june2009-paper2

Answer key

### 2.0.2 UGC NET CSE | June 2009 | Part 2 | Question: 33 top

In which addressing mode the operand is given explicitly in the instruction itself ?

A. Absolute mode
B. Immediate mode
C. Indirect mode
D. Index mode

ugcnetcse-june2009-paper2

Answer key

### 2.0.3 UGC NET CSE | June 2009 | Part 2 | Question: 34 top

A compiler that runs on one machine and produces code for a different machine is called :

A. Cross compilation
B. One pass compilation
C. Two pass compilation
D. None of the above

ugcnetcse-june2009-paper2

Answer key

## 2.1 8085 Microprocessor (6) top

### 2.1.1 8085 Microprocessor: UGC NET CSE | December 2014 | Part 3 | Question: 04 top

Match the following $8085$ instructions with the flags **:**

| | **List – I** | | **List – II** |
|---|---|---|---|
| a. | XCHG | i. | Only carry flag is affected |
| b. | SUB | ii. | No flags are affected |
| c. | STC | iii. | All flags other than carry are affected |
| d. | DCR | iv. | All flags are affected |

**Codes :**

A. a-iv, b-i, c-iii, d-ii
B. a-iii, b-ii, c-i, d-iv
C. a-ii, b-iii, c-i, d-iv
D. a-ii, b-iv, c-i, d-iii

ugcnetcse-dec2014-paper3 8085-microprocessor non-gate

Answer key

### 2.1.2 8085 Microprocessor: UGC NET CSE | December 2014 | Part 3 | Question: 05 top

How many times will the following loop be executed ?

```
    LXI B, 0007 H
LOP : DCX B
    MOV A, B
    ORA C
    JNZ LOP
```

A. $05$ B. $07$ C. $09$ D. $00$

ugcnetcse-dec2014-paper3 8085-microprocessor non-gate

Answer key

### 2.1.3 8085 Microprocessor: UGC NET CSE | December 2014 | Part 3 | Question: 06 top

Specify the contents of the accumulator and the status of the $S, Z$ and $CY$ flags when $8085$ microprocessor performs addition of $87H$ and $79H$.

A. $11,1,1,1$ B. $10,0,1,0$ C. $01,1,0,0$ D. $00,0,1,1$

ugcnetcse-dec2014-paper3 8085-microprocessor non-gate

Answer key

### 2.1.4 8085 Microprocessor: UGC NET CSE | June 2016 | Part 3 | Question: 3 top

Which of the following in 8085 microprocessor performs HL=HL+DE ?

A. DAD D B. DAD H C. DAD B D. DAD SP

ugcnetcse-june2016-paper3 co-and-architecture 8085-microprocessor

Answer key

### 2.1.5 8085 Microprocessor: UGC NET CSE | November 2017 | Part 2 | Question: 31 top

Consider the following program fragment in assembly language:

```
        mov ax, 0h
        mov cx, 0A h
do loop:
        dec ax
        loop doloop
```

What is the value of $ax$ and $cx$ registers after the completion of the doloop ?

A. $ax = FFF5\,h$ and $cx = 0\,h$
B. $ax = FFF6\,h$ and $cx = 0\,h$
C. $ax = FFF7\,h$ and $cx = 0A\,h$
D. $ax = FFF5\,h$ and $cx = 0A\,h$

ugcnetcse-nov2017-paper2 co-and-architecture 8085-microprocessor

Answer key

### 2.1.6 8085 Microprocessor: UGC NET CSE | November 2017 | Part 2 | Question: 32 top

Consider the following assembly program fragment:

```
stc
mov al, 11010110b
mov cl,2
rcl al,3
rol al, 4
shr al, cl
mul cl
```

The contents of the destination register $ax$ (in hexadecimal ) and the status of Carry Flag (CF) after the execution of above instructions, are:

A. $ax = 003CH;\ CF = 0$
B. $ax = 001EH;\ CF = 0$
C. $ax = 007BH;\ CF = 1$
D. $ax = 00B7H;\ CF = 1$

ugcnetcse-nov2017-paper2 8085-microprocessor non-gate

Answer key

## 2.2 Accumultor (1) top

### 2.2.1 Accumultor: UGC NET CSE | October 2020 | Part 2 | Question: 6 top

The following program is stored in memory unit of the basic computer. What is the content of the accumulator after the execution of program? (All location numbers listed below are in hexadecimal).

| Location | Instruction |
|---|---|
| 210 | CLA |
| 211 | ADD 217 |
| 212 | INC |
| 213 | STA 217 |
| 214 | LDA 218 |
| 215 | CMA |
| 216 | AND 217 |
| 217 | 1234H |
| 218 | 9CE2H |

A. 1002H B. 2011H C. 2022H D. 0215H

ugcnetcse-oct2020-paper2 accumultor assembly-language co-and-architecture

Answer key

## 2.3 Addressing Modes (10) top

### 2.3.1 Addressing Modes: UGC NET CSE | August 2016 | Part 3 | Question: 5 top

In _____ addressing mode, the operands are stored in the memory. The address of the corresponding memory location is given in a register which is specified in the instruction.

A. Register direct
B. Register indirect
C. Base indexed
D. Displacement

ugcnetcse-aug2016-paper3 co-and-architecture addressing-modes

Answer key

### 2.3.2 Addressing Modes: UGC NET CSE | December 2008 | Part 2 | Question: 38 top

In which addressing mode, the effective address of the operand is generated by adding a constant value to the contents of register ?

A. absolute mode
B. immediate mode
C. indirect mode
D. index mode

ugcnetcse-dec2008-paper2 co-and-architecture addressing-modes

Answer key

### 2.3.3 Addressing Modes: UGC NET CSE | December 2010 | Part 2 | Question: 34 top

The register or main memory location which contains the effective address of the operand is known as

A. Pointer
B. Special location
C. Indexed register
D. None of the above

ugcnetcse-dec2010-paper2 co-and-architecture addressing-modes

Answer key

### 2.3.4 Addressing Modes: UGC NET CSE | December 2013 | Part 3 | Question: 49 top

Match the following:

| | List -I | | List-II |
|---|---|---|---|
| a. | Indexed addressing | i. | is not used when an operand is moved from memory into a register or from a register to memory |
| b. | Direct addressing | ii. | Memory address is computed by adding up two registers plus an (optional) offset |
| c. | Register addressing | iii. | Addressing memory by giving a register plus a content offset |
| d. | Base indexed addressing | iv. | can only be used to access global variables whose address is known at compile time |

**Codes:**

A. a-ii, b-i, c-iv, d-iii
B. a-ii, b-iv, c-i, d-iii
C. a-iii, b-iv, c-i, d-ii
D. a-iii, b-i, c-iv, d-ii

ugcnetcse-dec2013-paper3 co-and-architecture addressing-modes

Answer key

## 2.3.5 Addressing Modes: UGC NET CSE | January 2017 | Part 3 | Question: 4 top

Match the following :

| | Addressing Mode | | Location of operand |
|---|---|---|---|
| a. | Implied | i. | Registers which are in CPU |
| b. | Immediate | ii. | Register specifies the address of the operand |
| c. | Register | iii. | Specified in the register |
| d. | Register Indirect | iv. | Specified implicitly in the definition of instruction |

**Codes :**

A. a-iv, b-iii, c-i, d-ii
B. a-iv, b-i, c-iii, d-ii
C. a-iv, b-ii, c-i, d-iii
D. a-iv, b-iii, c-ii, d-i

ugcnetcse-jan2017-paper3 co-and-architecture addressing-modes

Answer key

## 2.3.6 Addressing Modes: UGC NET CSE | June 2012 | Part 3 | Question: 27 top

Identify the addressing modes of the below instructions and match them :

| | | | |
|---|---|---|---|
| (a) | ADI | (i) | Immediate addressing |
| (b) | STA | (ii) | Direct Addressing |
| (c) | CMA | (iii) | Implied Addressing |
| (d) | SUB | (iv) | Register addressing |

A. a-i, b-ii, c-iii, d-iv
B. a-ii, b-i, c-iv, d-iii
C. a-iii, b-ii, c-i, d-iv
D. a-iv, b-iii, c-ii, d-i

ugcnetcse-june2012-paper3 co-and-architecture addressing-modes

Answer key

## 2.3.7 Addressing Modes: UGC NET CSE | June 2014 | Part 3 | Question: 40 top

The advantage of _____ is that it can reference memory without paying the price of having a full memory address in the instruction.

A. Direct addressing
B. Indexed addressing
C. Register addressing
D. Register Indirect addressing

ugcnetjune2014iii co-and-architecture addressing-modes

Answer key

### 2.3.8 Addressing Modes: UGC NET CSE | June 2016 | Part 3 | Question: 5 top

The ____ addressing mode is similar to register indirect addressing mode, except that an offset is added to the contents of the register. The offset and register are specified in the instruction.

A. Base indexed
B. Base indexed plus displacement
C. Indexed
D. Displacement

ugcnetcse-june2016-paper3 co-and-architecture addressing-modes

Answer key

### 2.3.9 Addressing Modes: UGC NET CSE | June 2019 | Part 2 | Question: 11 top

Which type of addressing mode, less number of memory references are required?

A. Immediate
B. Implied
C. Register
D. Indexed

ugcnetcse-june2019-paper2 co-and-architecture addressing-modes

Answer key

### 2.3.10 Addressing Modes: UGC NET CSE | November 2017 | Part 3 | Question: 4 top

Which of the following addressing mode is best suited to access elements of an array of contiguous memory locations?

A. Indexed addressing mode
B. Base Register addressing mode
C. Relative address mode
D. Displacement mode

ugcnetcse-nov2017-paper3 addressing-modes co-and-architecture

Answer key

## 2.4 Assembly (14) top

### 2.4.1 Assembly: UGC NET CSE | August 2016 | Part 2 | Question: 32 top

The content of the accumulator after the execution of the following 8085 assembly language program, is

MVI A, 35H
MOV B, A
STC
CMC
RAR
XRA B

A. $00H$
B. $35H$
C. $EFH$
D. $2FH$

ugcnetcse-aug2016-paper2 co-and-architecture assembly 8085-microprocessor

Answer key

### 2.4.2 Assembly: UGC NET CSE | December 2008 | Part 2 | Question: 37 top

An assembly program contains :

1. imperative and declarative statements
2. imperative and assembler directives
3. imperative and declarative statements as well as assembler directives
4. declarative statements and assembler directives

ugcnetcse-dec2008-paper2 co-and-architecture assembly

Answer key

## 2.4.3 Assembly: UGC NET CSE | December 2010 | Part 2 | Question: 31 top

Object code is the output of _____.

A. Operating System
B. Compiler or Assembler
C. Only Assembler
D. Only Compiler

ugcnetcse-dec2010-paper2 co-and-architecture assembly

Answer key

## 2.4.4 Assembly: UGC NET CSE | December 2010 | Part 2 | Question: 35 top

Macro-processors are _____.

A. Hardware
B. Compiler
C. Registers
D. None of the above

ugcnetcse-dec2010-paper2 co-and-architecture assembly 8085-microprocessor

Answer key

## 2.4.5 Assembly: UGC NET CSE | December 2015 | Part 3 | Question: 2 top

What will be the output at $\mathrm{PORT1}$ if the following program is executed?

```
MVI B, 82H
MOV A, B
MOV C, A
MVI D, 37H
OUT PORT1
HLT
```

A. $37H$
B. $82H$
C. $B9H$
D. $00H$

ugcnetcse-dec2015-paper3 8086 assembly co-and-architecture non-gate

Answer key

## 2.4.6 Assembly: UGC NET CSE | December 2018 | Part 2 | Question: 15 top

Consider the following $\mathrm{x86}$ – assembly language instructions:

```
MOV AL, 153
NEG AL
```

The contents of the destination register $AL$ (in $8$-bit binary notation), th status of Carry Flag $(CF)$ and Sign Flag $(SF)$ after the execution of above instructions, are

A. $AL = 0110\,0110;\ CF = 0;\ SF = 0$
B. $AL = 0110\,0111;\ CF = 0;\ SF = 1$
C. $AL = 0110\,0110;\ CF = 1;\ SF = 1$
D. $AL = 0110\,0111;\ CF = 1;\ SF = 0$

ugcnetcse-dec2018-paper2 computer-architecture assembly non-gate

Answer key

## 2.4.7 Assembly: UGC NET CSE | July 2018 | Part 2 | Question: 97 top

Match the items in **List-I** and **List-II** :

| | **List-I** | | **List-II** |
|---|---|---|---|
| (a) | interrupts which can be delayed when a much highest priority interrupt has occurred | (i) | Normal |
| (b) | Unplanned interrupts which occur while executing a program | (ii) | Synchronous |
| (c) | Source of interrupt is in phase with the system clock | (iii) | Maskable |
| | | (iv) | Exception |

**Code :**

A. (a)-(ii), (b)-(i), (c)-(iv)
B. (a)-(ii), (b)-(iv), (c)-(iii)
C. (a)-(iii), (b)-(i), (c)-(ii)
D. (a)-(iii), (b)-(iv), (c)-(ii)

ugcnetcse-july2018-paper2 co-and-architecture assembly interrupts

Answer key

## 2.4.8 Assembly: UGC NET CSE | June 2013 | Part 3 | Question: 41 top

Which of the following is not an addressing mode?

A. Register indirect
B. Autoincrement
C. Relative indexed
D. Immediate operand

ugcnetcse-june2013-paper3 co-and-architecture assembly addressing-modes

Answer key

## 2.4.9 Assembly: UGC NET CSE | June 2013 | Part 3 | Question: 42 top

Computers can have instruction formats with

A. only two address and three address instructions
B. only one address and two address instructions
C. only one address, two address and three address instructions
D. zero address, one address, two address and three address instructions

ugcnetcse-june2013-paper3 co-and-architecture assembly

Answer key

## 2.4.10 Assembly: UGC NET CSE | June 2013 | Part 3 | Question: 43 top

What is not a p typical program control instruction?

A. MR
B. JMP
C. SHL
D. TST

ugcnetcse-june2013-paper3 co-and-architecture assembly

Answer key

## 2.4.11 Assembly: UGC NET CSE | June 2013 | Part 3 | Question: 44 top

Interrupt which arises from illegal or erroneous use of an instruction or data is

A. Software interrupt
B. Internal interrupt
C. External interrupt
D. None of the above

ugcnetcse-june2013-paper3 co-and-architecture assembly interrupts

Answer key

## 2.4.12 Assembly: UGC NET CSE | June 2016 | Part 3 | Question: 4 top

The Register that stores all interrupt requests is

Interrupt mask register

Interrupt service register

Interrupt request register

Status register

ugcnetcse-june2016-paper3 co-and-architecture assembly

Answer key

### 2.4.13 Assembly: UGC NET CSE | Junet 2015 | Part 2 | Question: 31 top

Match the following:

| | | | |
|---|---|---|---|
| a. | Forelward Reference Table | $i.$ | Assembler directive |
| b. | Mnemonic Table | $ii.$ | Uses array data structure |
| c. | Segment Register Table | $iii.$ | Contains machine OP code |
| d. | EQU | | Uses linked list data structure |

A. $a-ii, b-iii, c-iv, d-i$
B. $a-iii, b-iv, c-ii, d-i$
C. $a-iv, b-i, c-iii, d-ii$
D. $a-iv, b-iii, c-ii, d-ii$

ugcnetcse-june2015-paper2 assembly

Answer key

### 2.4.14 Assembly: UGC NET CSE | September 2013 | Part 3 | Question: 33 top

The instruction : MOV CL, [BX] [DI] + 8 represents the ____ addressing mode

A. Based Relative
B. Based Indexed
C. Indexed Relative
D. Register Indexed

ugcnetcse-sep2013-paper3 co-and-architecture assembly addressing-modes

Answer key

## 2.5 Byte Addressable (1) top

### 2.5.1 Byte Addressable: UGC NET CSE | June 2014 | Part 3 | Question: 43 top

A byte addressable computer has a memory capacity of $2^m$ Kbytes and can perform $2^n$ operations. An instruction involving $3$ operands and one operator needs a maximum of

A. $3m$ bits
B. $m+n$ bits
C. $3m+n$ bits
D. $3m+n+30$ bits

ugcnetjune2014iii co-and-architecture byte-addressable

Answer key

## 2.6 Cache Memory (4) top

### 2.6.1 Cache Memory: UGC NET CSE | December 2014 | Part 3 | Question: 01 top

A hierarchical memory system that uses cache memory has cache access time of $50$ nano seconds, main memory access time of $300$ nano seconds, $75\%$ of memory requests are for read, hit ratio of $0.8$ for read access and the write-through scheme is used. What will be the average access time of the system both for read and write requests ?

A. $157.5$ n.sec.
B. $110$ n.sec.
C. $75$ n.sec.
D. $82.5$ n.sec.

ugcnetcse-dec2014-paper3 co-and-architecture cache-memory

Answer key

### 2.6.2 Cache Memory: UGC NET CSE | July 2018 | Part 2 | Question: 98 top

Which of the following mapping is not used for mapping process in cache memory

A. Associative mapping
B. Direct mapping
C. Set-Associative mapping
D. Segmented - page mapping

ugcnetcse-july2018-paper2 co-and-architecture cache-memory

Answer key

### 2.6.3 Cache Memory: UGC NET CSE | June 2016 | Part 3 | Question: 6 top

In ___ method, the word is written to the block in both the cache and main memory, in parallel

A. Write through
B. Write back

C. Write protected

D. Direct mapping

ugcnetcse-june2016-paper3 co-and-architecture cache-memory

Answer key

### 2.6.4 Cache Memory: UGC NET CSE | October 2020 | Part 2 | Question: 5 top

Consider a machine with a byte addressable main memory of $2^{16}$ bytes block size of $8$ bytes. Assume that a direct mapped cache consisting of $32$ lines used with this machine. How many bits will be there in Tag, line and word field of format of main memory addresses?

A. $8,5,3$

B. $8,6,2$

C. $7,5,4$

D. $7,6,3$

ugcnetcse-oct2020-paper2 co-and-architecture cache-memory

Answer key

## 2.7 Cmos (1) top

### 2.7.1 Cmos: UGC NET CSE | July 2018 | Part 2 | Question: 91 top

CMOS is a computer chip on the motherboard, which is

A. RAM

B. ROM

C. EPROM

D. Auxillary storage

ugcnetcse-july2018-paper2 co-and-architecture cmos

Answer key

## 2.8 Co And Architecture (9) top

### 2.8.1 Co And Architecture: UGC NET CSE | December 2008 | Part 2 | Question: 39 top

Which of the following are Assembler Directives?

(i) EQU (ii) ORIGIN (iii) START (iv) END

A. (ii), (iii) and (iv)
B. (i), (iii) and (iv)
C. (iii) and (iv)
D. (i), (ii), (iii) and (iv)

ugcnetcse-dec2008-paper2 co-and-architecture

Answer key

### 2.8.2 Co And Architecture: UGC NET CSE | December 2010 | Part 2 | Question: 50 top

One of the distinguished features of super-computer over other category of computer is

A. Parallel processing

B. Highest accuracy level

C. More speed

D. More capacity

ugcnetcse-dec2010-paper2 co-and-architecture

Answer key

### 2.8.3 Co And Architecture: UGC NET CSE | December 2012 | Part 3 | Question: 27 top

In an enhancement of a CPU design, the speed of a floating point unit has been increased by 20% and the speed of a fixed point unit has been increased by 10%. What is the overall speed achieved if the ratio of the number of floating point operations to the number of fixed point operations is 2:3 and the floating point operation used to take twice the time taken by the fixed point operation in original design?

A. 1.62

B. 1.55

C. 1.85

D. 1.285

co-and-architecture ugcnetcse-dec2012-paper3

Answer key

### 2.8.4 Co And Architecture: UGC NET CSE | June 2012 | Part 2 | Question: 3 top

The branch logic that provides decision making capabilities in the control unit is known as

A. Controlled transfer
B. Conditional transfer
C. Unconditional transfer
D. None of the above

ugcnetcse-june2012-paper2 co-and-architecture

Answer key

### 2.8.5 Co And Architecture: UGC NET CSE | June 2012 | Part 2 | Question: 46 top

A complete micro computer system consists of

A. Microprocessor
B. Memory
C. Peripheral equipment
D. All of the above

co-and-architecture ugcnetcse-june2012-paper2

Answer key

### 2.8.6 Co And Architecture: UGC NET CSE | June 2012 | Part 2 | Question: 47 top

Where does a computer add and compare data?

A. Hard disk
B. Floppy disk
C. CPU chip
D. Memory chip

co-and-architecture ugcnetcse-june2012-paper2

Answer key

### 2.8.7 Co And Architecture: UGC NET CSE | June 2012 | Part 3 | Question: 61 top

Identify the devices given below with their IC numbers :

| | | | |
|---|---|---|---|
| (a) | USART | (i) | 8251 |
| (b) | Micro Controller | (ii) | 8051 |
| (c) | Interrupt C ontroller | (iii) | 8259 |
| (d) | DMA Controller | (iv) | 8257 |

A. (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)
B. (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)
C. (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)
D. (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)

ugcnetcse-june2012-paper3 co-and-architecture

Answer key

### 2.8.8 Co And Architecture: UGC NET CSE | October 2020 | Part 2 | Question: 44 top

Which of the following statements with respect to multiprocessor system are true?

a. Multiprocessor system is a computer system having two or more processors
b. In Multiprocessor system, Multiprocessor system is classified as tightly coupled and loosely coupled
c. Multiprocessor system is classified as homogeneous and heterogeneous

Choose the correct answer from the options given below:

A. $(a)$ only
B. $(a)$ and $(b)$ only
C. $(a)$ and $(c)$ only
D. $(b)$ and $(c)$ only

ugcnetcse-oct2020-paper2 co-and-architecture

### 2.8.9 Co And Architecture: UGC NET CSE | September 2013 | Part 3 | Question: 31 top

Which of the following electronic component is not found in IC's?

A. Diode
B. Resistor
C. Transistor
D. Inductor

ugcnetcse-sep2013-paper3 co-and-architecture

Answer key

## 2.9 Computer Architecture (3) top

### 2.9.1 Computer Architecture: UGC NET CSE | December 2013 | Part 3 | Question: 52 top

Serial access memories are useful in applications where

A. Data consists of numbers
B. Short access time is required
C. Each stored word is processed differently.
D. None of these

ugcnetcse-dec2013-paper3 co-and-architecture computer-architecture

Answer key

### 2.9.2 Computer Architecture: UGC NET CSE | June 2012 | Part 2 | Question: 32 top

Cached and interleaved memories are ways of speeding up memory access between CPU's and slower RAM. Which memory models are best suited (i.e. improves the performance most) for which programs ?

I. Cached memory is best suited for small loops.
II. Interleaved memory is best suited for small loops
III. Interleaved memory is best suited for large sequential code.
IV. Cached memory is best suited for large sequential code.

A. I and II are true
B. I and III are true
C. IV and II are true
D. IV and III are true

ugcnetcse-june2012-paper2 computer-architecture cache-memory

Answer key

### 2.9.3 Computer Architecture: UGC NET CSE | June 2012 | Part 3 | Question: 3 top

The concept of pipelining is a most effective in improving performance in the tasks being performed in different stages:

A. require different amount of time
B. require about the same amount of time
C. require different amount of time with time difference between any two tasks being same
D. require different amount with time difference between any two tasks being different

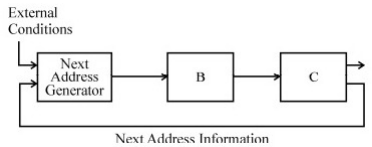
ugcnetcse-june2012-paper3 computer-architecture pipelining

Answer key

## 2.10 Control Unit (2) top

### 2.10.1 Control Unit: UGC NET CSE | January 2017 | Part 3 | Question: 3 top

The general configuration of the microprogrammed control unit is given below:




What are blocks B and C in the diagram respectively?

A. Block address register and cache memory
B. Control address register and control memory
C. Branch register and cache memory
D. Control address register and random access memory

ugcnetcse-jan2017-paper3 co-and-architecture control-unit

Answer key

### 2.10.2 Control Unit: UGC NET CSE | October 2020 | Part 2 | Question: 81 top

Given below are two statements:

Statement $I$: Hardwired control unit can be optimized to produce fast mode of operation

Statement $II$: Indirect addressing mode needs two memory reference to fetch operand

In the light of the above statements, choose the correct answer from the options given below

A. Both Statement $I$ and Statement $II$ are true
B. Both Statement $I$ and Statement $II$ are false
C. Statement $I$ is correct but Statement $II$ is false
D. Statement $I$ is incorrect but Statement $II$ is true

ugcnetcse-oct2020-paper2 co-and-architecture control-unit

Answer key

## 2.11 Cpu (1) top

### 2.11.1 Cpu: UGC NET CSE | December 2011 | Part 2 | Question: 31 top

CPU does not perform the operation

A. Data transfer
B. Logic operation
C. Arithmetic operation
D. All of the above

ugcnetcse-dec2011-paper2 co-and-architecture cpu

Answer key

## 2.12 Data Transfer (1) top

### 2.12.1 Data Transfer: UGC NET CSE | Junet 2015 | Part 3 | Question: 2 top

Consider a 32-bit microprocessor, with a 16-bit external data bus, driven by an 8 MHz input clock. Assume that this microprocessor has a bus cycle whose minimum duration equals four input clock cycles. What is the maximum data transfer rate for this microprocessor?

A. $8 \times 10^6$ bytes/sec
B. $4 \times 10^6$ bytes/sec
C. $16 \times 10^6$ bytes/sec
D. $4 \times 10^9$ bytes/sec

ugcnetcse-june2015-paper3 co-and-architecture data-transfer

Answer key

## 2.13 Dma (1) top

### 2.13.1 Dma: UGC NET CSE | December 2015 | Part 3 | Question: 5 top

A DMA controller transfers 32-bit words to memory using cycle Stealing. The words are assembled from a device that transmits characters at a rate of 4800 characters per second. The CPU is fetching and executing instructions at an average rate of one million instructions per second. By how much will the CPU be slowed down because of the DMA transfer?

A. 0.06%
B. 0.12%
C. 1.2%
D. 2.5%

ugcnetcse-dec2015-paper3 co-and-architecture dma

Answer key

## 2.14 Dynamic Ram (1) top

### 2.14.1 Dynamic Ram: UGC NET CSE | December 2015 | Part 3 | Question: 4 top

A dynamic RAM has refresh cycle of $32$ times per msec. Each refresh operation requires $100$ msec and a memory cycle requires $250$ msec. What percentage of memory's total operating time is required for refreshes?

A. $0.64$
B. $0.96$
C. $2.00$
D. $0.32$

ugcnetcse-dec2015-paper3 co-and-architecture dynamic-ram

Answer key

## 2.15 Flags (1) top

### 2.15.1 Flags: UGC NET CSE | December 2012 | Part 3 | Question: 31 top

Which of the following flags are set when ‘JMP’ instruction is executed?

A. SF and CF
B. AF and CF
C. All flags
D. No flag is set

ugcnetcse-dec2012-paper3 computer-architecture flags

Answer key

## 2.16 Hardware Interrupt (1) top

### 2.16.1 Hardware Interrupt: UGC NET CSE | June 2016 | Part 3 | Question: 2 top

8085 microprocessor has ___ hardware interrupt

A. 2
B. 3
C. 4
D. 5

ugcnetcse-june2016-paper3 co-and-architecture hardware-interrupt

Answer key

## 2.17 Instruction Format (1) top

### 2.17.1 Instruction Format: UGC NET CSE | December 2013 | Part 3 | Question: 50 top

Which of the following is a design criteria for instruction formats?

A. The size of instructions
B. The number of bits in the address fields
C. The sufficient space in the instruction format to express all the operands desired
D. All of these

ugcnetcse-dec2013-paper3 co-and-architecture instruction-format

Answer key

## 2.18 Integrated Circuits (1) top

### 2.18.1 Integrated Circuits: UGC NET CSE | December 2011 | Part 2 | Question: 32 top

A chip having $150$ gates will be classified as

A. SSI
B. MSI
C. LSI
D. VLSI

ugcnetcse-dec2011-paper2 co-and-architecture integrated-circuits

Answer key

## 2.19 Interrupts (3) top

### 2.19.1 Interrupts: UGC NET CSE | December 2015 | Part 3 | Question: 6 top

A CPU handles interrupt by executing interrput service subroutine ____

A. by checking interrupt register after execution of each instruction
B. by checking interrupt register at the end of the fetch cycle
C. whenever an interrupt is registered
D. by checking interrupt register at regular time interval

ugcnetcse-dec2015-paper3 interrupts co-and-architecture

Answer key

### 2.19.2 Interrupts: UGC NET CSE | January 2017 | Part 3 | Question: 1 top

Which of the following is an interrupt according to temporal relationship with system clock?

A. Maskable interrupt
B. Periodic interrupt

C. Division by zero

D. Synchronous interrupt

ugcnetcse-jan2017-paper3 interrupts co-and-architecture

Answer key

### 2.19.3 Interrupts: UGC NET CSE | June 2012 | Part 2 | Question: 37 top

Interrupts which are initiated by an instruction are

A. Internal

B. External

C. Hardware

D. Software

co-and-architecture interrupts ugcnetcse-june2012-paper2

Answer key

## 2.20 Language (1) top

### 2.20.1 Language: UGC NET CSE | Junet 2015 | Part 3 | Question: 3 top

The RST 7 instruction in 8085 microprocessor is equal to

A. CALL 0010 H

B. CALL 0034 H

C. CALL 0038 H

D. CALL 003C H

ugcnetcse-june2015-paper3 8085-microprocessor assembly language non-gate co-and-architecture

Answer key

## 2.21 Machine Instructions (2) top

### 2.21.1 Machine Instructions: UGC NET CSE | January 2017 | Part 2 | Question: 32 top

Consider the following assembly language instructions:

```
mov al, 15
mov ah, 15
xor al, al
mov cl, 3
shr ax, cl
add al, 90H
add ah, 0
```

What is the value in $ax$ register after execution of above instructions?

A. $0270H$

B. $0170H$

C. $01E0H$

D. $0370H$

ugcnetjan2017ii co-and-architecture machine-instructions

Answer key

### 2.21.2 Machine Instructions: UGC NET CSE | October 2020 | Part 2 | Question: 75 top

Arrange the following types of machine in descending order of complexity.

a. SISD

b. MIMD

c. SIMD

Choose the correct answer from the options given below:

A. $a,b,c$

B. $c,b,a$

C. $b.c.a$

D. $c,a,b$

ugcnetcse-oct2020-paper2 co-and-architecture machine-instructions

Answer key

## 2.22 Macros (1) top

### 2.22.1 Macros: UGC NET CSE | December 2010 | Part 2 | Question: 32 top

'Macro' in an assembly level program is _____.

A. Sub program

B. A complete program

C. A hardware portion

D. Relative coding

ugcnetcse-dec2010-paper2 co-and-architecture assembly macros

Answer key

## 2.23 Memory (4) top

### 2.23.1 Memory: UGC NET CSE | June 2019 | Part 2 | Question: 12 top

Suppose that the register $A$ and the register $K$ have the bit configuration. Only the three leftmost bits of $A$ are compared with memory words because $K$ has $1$'s in these positions. Because of its organization, this type of memory is uniquely suited to parallel searches by data association. This type of memory is known as

A. RAM
B. ROM
C. content addressable memory
D. secondary memory

ugcnetcse-june2019-paper2 co-and-architecture memory

Answer key

### 2.23.2 Memory: UGC NET CSE | June 2019 | Part 2 | Question: 19 top

How many address lines and data lines are required to provide a memory capacity of $16K \times 16$?

A. $10, 4$
B. $16, 16$
C. $14, 16$
D. $4, 16$

ugcnetcse-june2019-paper2 co-and-architecture memory

Answer key

### 2.23.3 Memory: UGC NET CSE | September 2013 | Part 3 | Question: 30 top

Which logic family dissipates the minimum power?

A. DTL
B. TTL
C. ECL
D. CMOS

ugcnetcse-sep2013-paper3 co-and-architecture memory

Answer key

### 2.23.4 Memory: UGC NET CSE | September 2013 | Part 3 | Question: 32 top

A given memory chip has 14 address and 8 data pins. It has the following number of locations.

A. $2^8$
B. $2^{14}$
C. $2^6$
D. $2^{12}$

ugcnetcse-sep2013-paper3 co-and-architecture memory

Answer key

## 2.24 Memory Data Transfer (1) top

### 2.24.1 Memory Data Transfer: UGC NET CSE | Junet 2015 | Part 3 | Question: 5 top

The CPU of a system having 1 MIPS execution rate needs 4 machine cycles on an average for executing an instruction. The fifty percent of the cycles use memory bus. A memory read/write employs one machine cycle. For execution of the programs, the system utilizes 90% of the CPU time. For block data transfer, an IO device is attached to the system while CPU executes the background programs continuously. What is the maximum IO data transfer rate if programmed IO data transfer technique is used?

A. 500 Kbytes/sec
B. 2.2 Mbytes/sec
C. 125 Kbytes/sec
D. 250 Kbytes/sec

ugcnetcse-june2015-paper3 co-and-architecture memory-data-transfer

Answer key

## 2.25 Microprocessors (12) top

### 2.25.1 Microprocessors: UGC NET CSE | August 2016 | Part 3 | Question: 2 top

$8085$ microprocessor has ____ bit ALU.

A. $32$
B. $16$
C. $8$
D. $4$

ugcnetcse-aug2016-paper3 co-and-architecture microprocessors 8085-microprocessor

## 2.25.2 Microprocessors: UGC NET CSE | August 2016 | Part 3 | Question: 4 top

Which of the following in 8085 microprocessor performs $HL = HL + HL$ ?

A. DAD D B. DAD H C. DAD B D. DAD SP

ugcnetcse-aug2016-paper3 co-and-architecture microprocessors 8085-microprocessor

Answer key

## 2.25.3 Microprocessors: UGC NET CSE | December 2013 | Part 3 | Question: 54 top

The essential difference between traps and interrupts is

A. traps are asynchronous and interrupts are synchronous with the program.
B. traps are synchronous and interrupts are asynchronous with the program.
C. traps are synchronous and interrupts are asynchronous with the I/O devices.
D. None of these

ugcnetcse-dec2013-paper3 microprocessors

Answer key

## 2.25.4 Microprocessors: UGC NET CSE | January 2017 | Part 2 | Question: 34 top

The contents of Register $(BL)$ and Register $(AL)$ of $8085$ microprocessor are $49H$ and $3AH$ respectively. The contents of $AL$, the status of carry flag $(CF)$ and sign flag $(SF)$ after executing $'SUBAL, BL'$ assembly language instruction, are

A. $AL = 0FH;\ CF = 1;\ SF = 1$
B. $AL = F0H;\ CF = 0;\ SF = 0$
C. $AL = F1H;\ CF = 1;\ SF = 1$
D. $AL = 1FH;\ CF = 1;\ SF = 1$

ugcnetjan2017ii microprocessors machine-instructions co-and-architecture

Answer key

## 2.25.5 Microprocessors: UGC NET CSE | January 2017 | Part 3 | Question: 5 top

In $8085$ microprocessor, the digit $5$ indicates that the microprocessor needs

A. $-5$ volts, $+5$ volts supply
B. $+5$ volts supply only
C. $-5$ volts supply only
D. $5$ MHz clock

ugcnetcse-jan2017-paper3 co-and-architecture microprocessors

Answer key

## 2.25.6 Microprocessors: UGC NET CSE | January 2017 | Part 3 | Question: 6 top

In $8085$, which of the following performs: load register pair immediate operation?

A. LDAX rp B. LKLD addr C. LXI rp, data D. INX rp

ugcnetcse-jan2017-paper3 co-and-architecture microprocessors

Answer key

## 2.25.7 Microprocessors: UGC NET CSE | July 2018 | Part 2 | Question: 100 top

In 8085 microprocessor, what is the output of following program?

```
LDA 8000H
MVI B, 30H
ADD B
STA 8001 H
```

A. Read a number from input port and store it in memory
B. Read a number from input device with address 8000H and store it in memory location 8001H
C. Read a number from memory at location 8000H and store it in memory location 8001H
D. Load A with data from input device with address 8000H and display it on the output device with address 8001H

ugcnetcse-july2018-paper2 co-and-architecture 8085-microprocessor microprocessors

Answer key

## 2.25.8 Microprocessors: UGC NET CSE | November 2017 | Part 3 | Question: 1 top

In $8085$ microprocessor which of the following flag(s) is (are) affected by an arithmetic operation?

A. AC flag only
B. CY flag Only
C. Z flag Only
D. AC, CY, Z flags

ugcnetcse-nov2017-paper3 microprocessors 8085-microprocessor co-and-architecture

Answer key

## 2.25.9 Microprocessors: UGC NET CSE | November 2017 | Part 3 | Question: 2 top

In $8085$ microprocessor the address bus is of _____ bits.

A. $4$
B. $8$
C. $16$
D. $32$

ugcnetcse-nov2017-paper3 microprocessors 8085-microprocessor co-and-architecture

## 2.25.10 Microprocessors: UGC NET CSE | November 2017 | Part 3 | Question: 3 top

In the architecture of $8085$ microprocessor match the following :

| | | | |
|---|---|---|---|
| (a) | Processing unit | (i) | Interrupt |
| (b) | Instruction unit | (ii) | General purpose Register |
| (c) | Storage and Interface unit | (iii) | ALU |
| | | (iv) | Timing and Control |

**Code :**

A. (a)-(iv) (b)-(i) (c)-(ii)
B. (a)-(iii) (b)-(iv) (c)-(ii)
C. (a)-(ii) (b)-(iii) (c)-(i)
D. (a)-(i) (b)-(ii) (c)-(iv)

ugcnetcse-nov2017-paper3 microprocessors 8085-microprocessor co-and-architecture

Answer key

## 2.25.11 Microprocessors: UGC NET CSE | November 2017 | Part 3 | Question: 5 top

Which of the following is correct statement?

A. In memory – mapped I/O, the CPU can manipulate I/O data residing in interface registers that are not used to manipulate memory words.
B. The isolated I/O method isolates memory and I/O addresses so that memory address range is not affected by interface address assignment.
C. In asynchronous serial transfer of data the two units share a common clock.
D. In synchronous serial transmission of data the two units have different clocks.

ugcnetcse-nov2017-paper3 microprocessors co-and-architecture

Answer key

## 2.25.12 Microprocessors: UGC NET CSE | November 2017 | Part 3 | Question: 6 top

A micro-instruction format has micro-ops field which is divided into three subfields $F1$, $F2$, $F3$ each having seven distinct micro-operations, conditions field $CD$ for four status bits, branch field $BR$ having four options used in conjunction with address field $ADF$. The address space is of $128$ memory locations. The size of micro-instruction is

A. $17$ bits
B. $20$ bits
C. $24$ bits
D. $32$ bits

ugcnetcse-nov2017-paper3 microprocessors co-and-architecture

Answer key

## 2.26 Microprogram Control Unit (1) top

### 2.26.1 Microprogram Control Unit: UGC NET CSE | June 2019 | Part 2 | Question: 14 top

The fault can be easily diagnosed in the micro-program control unit using diagnostic tools by maintaining the contents of

A. flags and counters
B. registers and counters
C. flags and registers
D. flags, registers and counters

ugcnetcse-june2019-paper2 co-and-architecture microprogram-control-unit

Answer key

## 2.27 Parallel Computing (1) top

### 2.27.1 Parallel Computing: UGC NET CSE | June 2012 | Part 3 | Question: 5 top

Suppose that the given application is run on a 64-processor machine and that 70 percent of the application can be parallelized. Then the expected performance improvement using Amdahl's law is

A. 4.22
B. 3.22
C. 3.32
D. 3.52

parallel-computing ugcnetcse-june2012-paper3

Answer key

## 2.28 Parallel Processing (1) top

### 2.28.1 Parallel Processing: UGC NET CSE | Junet 2015 | Part 2 | Question: 46 top

In the case of parallelization, Amdahl's law states that if $P$ is the proportion of a program that can be made parallel and $(1-P)$ is the proportion that cannot be parallelized, then the maximum speed-up that can be achieved by using $N$ processors is:

A. $\frac{1}{(1-P)+N.P}$
B. $\frac{1}{(N-1)P+P}$
C. $\frac{1}{(1-P)+\frac{P}{N}}$
D. $\frac{1}{P+\frac{(1-P)}{N}}$

ugcnetcse-june2015-paper2 parallel-processing amdahls-law

Answer key

## 2.29 Pipelining (5) top

### 2.29.1 Pipelining: UGC NET CSE | December 2004 | Part 2 | Question: 47 top

The processing speeds of pipeline segments are usually :

A. Equal
B. Unequal
C. Greater
D. None of these

ugcnetcse-dec2004-paper2 co-and-architecture pipelining

Answer key

### 2.29.2 Pipelining: UGC NET CSE | June 2012 | Part 2 | Question: 48 top

Pipelining strategy is called implement

A. instruction execution
B. instruction prefetch
C. instruction decoding
D. instruction manipulation

co-and-architecture pipelining ugcnetcse-june2012-paper2

Answer key

### 2.29.3 Pipelining: UGC NET CSE | June 2016 | Part 2 | Question: 48 top

Pipelining improves performance by

A. decreasing instruction latency
B. eliminating data hazards

C. exploiting instruction level parallelism

D. decreasing the cache miss rate

ugcnetcse-june2016-paper2 co-and-architecture pipelining

Answer key

### 2.29.4 Pipelining: UGC NET CSE | October 2020 | Part 2 | Question: 43 top

Which of the following statements with respect to $K$-segment pipelining are true?

a. Maximum speedup that a pipeline can provide is $K$ if all segments take same time to complete a task

b. It is impossible to achieve $K$ times speedup in a $K$-segment pipeline

c. Time required to fill the pipeline with tasks is $K$ times the time required for one computation

Choose the correct answer from the options given below:

A. $(a)$ and $(b)$ only

B. $(b)$ and $(c)$ only

C. $(a)$ and $(c)$ only

D. $(a), (b)$ and $(c)$

ugcnetcse-oct2020-paper2 co-and-architecture pipelining

Answer key

### 2.29.5 Pipelining: UGC NET CSE | October 2020 | Part 2 | Question: 7 top

A non-pipeline system takes $50$ns to process a task. The same task can be processed in six-segment pipeline with a clockcycle of $10$ns. Determine approximately the speedup ratio of the pipeline for $500$ tasks.

A. $6$

B. $4.95$

C. $5.7$

D. $5.5$

ugcnetcse-oct2020-paper2 co-and-architecture pipelining

Answer key

## 2.30 Priority Encoder (1) top

### 2.30.1 Priority Encoder: UGC NET CSE | December 2015 | Part 3 | Question: 1 top

The three outputs $x_1x_2x_3$ from the $8 \times 3$ priority encoder are used to provide a vector address of the form $101x_1x_2x_3 00$. what is the second highest priority vector address in hexadecimal if the vector addresses are starting from the one with the highest priority?

A. $BC$

B. $A4$

C. $BD$

D. $AC$

ugcnetcse-dec2015-paper3 co-and-architecture priority-encoder

Answer key

## 2.31 Processor Address Bus (1) top

### 2.31.1 Processor Address Bus: UGC NET CSE | June 2019 | Part 2 | Question: 49 top

A processor can support a maximum memory of $4$ GB where memory is word addressable and a word is $2$ bytes. What will be the size of the address bus of the processor?

A. At least $28$ bits

B. At least $2$ bytes

C. At least $31$ bits

D. Minimum $4$ bytes

ugcnetcse-june2019-paper2 co-and-architecture processor-address-bus

Answer key

## 2.32 Register (1) top

### 2.32.1 Register: UGC NET CSE | August 2016 | Part 3 | Question: 3 top

The register that stores the bits required to mask the interrupts is _____.

A. Status register

B. Interrupt service register

C. Interrupt mask register

D. Interrupt request register

ugcnetcse-aug2016-paper3 co-and-architecture register interrupts

Answer key

## 2.33 Speedup (2) top

### 2.33.1 Speedup: UGC NET CSE | December 2012 | Part 3 | Question: 49 top

Let $f$ be the fraction of the computation (in terms of time) that is parallelizable. $P$ the number of processors in the system, and $s_p$ the speed up achievable in comparison with sequential execution – then the $s_p$ can be calculated using the relation:

A. $\frac{1}{1-f-f/P}$ B. $\frac{P}{P-f(P+1)}$ C. $\frac{1}{1-f+f/P}$ D. $\frac{P}{P+f(P-1)}$

ugcnetcse-dec2012-paper3 co-and-architecture speedup

Answer key

### 2.33.2 Speedup: UGC NET CSE | June 2019 | Part 2 | Question: 20 top

Suppose that a computer program takes $100$ seconds of execution time on a computer with multiplication operation responsible for $80$ seconds of this time. How much do you have to improve the speed of the multiplication operation if you are asked to execute this program four times faster?

A. $14$ times faster
B. $15$ times faster
C. $16$ times faster
D. $17$ times faster

ugcnetcse-june2019-paper2 co-and-architecture speedup

Answer key

## Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2.0.1 | Q-Q | 2.0.2 | Q-Q | 2.0.3 | Q-Q | 2.1.1 | D | 2.1.2 | B |
| 2.1.3 | D | 2.1.4 | A | 2.1.5 | B | 2.1.6 | A | 2.2.1 | D |
| 2.3.1 | Q-Q | 2.3.2 | D | 2.3.3 | Q-Q | 2.3.4 | C | 2.3.5 | A |
| 2.3.6 | A | 2.3.7 | D | 2.3.8 | D | 2.3.9 | X | 2.3.10 | A |
| 2.4.1 | Q-Q | 2.4.2 | Q-Q | 2.4.3 | Q-Q | 2.4.4 | Q-Q | 2.4.5 | C |
| 2.4.6 | Q-Q | 2.4.7 | Q-Q | 2.4.8 | C | 2.4.9 | D | 2.4.10 | C |
| 2.4.11 | B | 2.4.12 | C | 2.4.13 | D | 2.4.14 | B | 2.5.1 | D |
| 2.6.1 | A | 2.6.2 | Q-Q | 2.6.3 | A | 2.6.4 | A | 2.7.1 | Q-Q |
| 2.8.1 | Q-Q | 2.8.2 | Q-Q | 2.8.3 | X | 2.8.4 | A | 2.8.5 | D |
| 2.8.6 | C | 2.8.7 | A | 2.8.8 | C | 2.8.9 | D | 2.9.1 | D |
| 2.9.2 | B | 2.9.3 | B | 2.10.1 | B | 2.10.2 | A | 2.11.1 | Q-Q |
| 2.12.1 | B | 2.13.1 | B | 2.14.1 | D | 2.15.1 | D | 2.16.1 | D |
| 2.17.1 | D | 2.18.1 | Q-Q | 2.19.1 | D | 2.19.2 | D | 2.19.3 | D |
| 2.20.1 | C | 2.21.1 | A | 2.21.2 | C | 2.22.1 | Q-Q | 2.23.1 | C |
| 2.23.2 | C | 2.23.3 | D | 2.23.4 | B | 2.24.1 | D | 2.25.1 | Q-Q |
| 2.25.2 | Q-Q | 2.25.3 | B | 2.25.4 | C | 2.25.5 | B | 2.25.6 | C |
| 2.25.7 | Q-Q | 2.25.8 | D | 2.25.9 | C | 2.25.10 | B | 2.25.11 | B |
| 2.25.12 | B | 2.26.1 | D | 2.27.1 | B | 2.28.1 | C | 2.29.1 | Q-Q |
| 2.29.2 | X | 2.29.3 | C | 2.29.4 | A | 2.29.5 | B | 2.30.1 | A |
| 2.31.1 | C | 2.32.1 | Q-Q | 2.33.1 | C | 2.33.2 | C | | |

### 3.0.1 UGC NET CSE | June 2013 | Part 2 | Question: 21 top

Given the production rules of a grammar G1 as

$S_1 \rightarrow AB \mid aaB$

$A \rightarrow a \mid Aa$

$B \rightarrow b$

and the production rules of a grammar G2 as

$S_2 \rightarrow aS_2bS_2 \mid bS_2aS_2 \mid \lambda$

Which of the following is correct statement?

A. G1 is ambiguous and G2 is not ambiguous
B. G1 is ambiguous and G2 is ambiguous
C. G1 is not ambiguous and G2 is ambiguous
D. G1 is not ambiguous and G2 is not ambiguous

ugcnetcse-june2013-paper2 compiler-design

Answer key

### 3.0.2 UGC NET CSE | December 2007 | Part 2 | Question: 35 top

In the context of compiler design, “reduction in strength” refers to :

A. code optimization obtained by the use of cheaper machine instructions
B. reduction in accuracy of the output
C. reduction in the range of values of input variables
D. reduction in efficiency of the program

ugcnetcse-dec2007-paper2

Answer key

### 3.0.3 UGC NET CSE | June 2012 | Part 3 | Question: 73 top

In which file the compiler manage various objects, which are used in windows programming?

A. Control File
B. Binary File
C. Text File
D. Obj File

ugcnetcse-june2012-paper3 compiler-design

Answer key

### 3.0.4 UGC NET CSE | December 2004 | Part 2 | Question: 31 top

Which activity is not included in the first pass of two pass assemblers ?

A. Build the symbol table
B. Construct the intermediate code
C. Separate mnemonic opcode and operand fields
D. None of the above

ugcnetcse-dec2004-paper2

### 3.0.5 UGC NET CSE | December 2004 | Part 2 | Question: 33 top

Code optimization is responsibility of :

A. Application programmer
B. System programmer
C. Operating system
D. All of the above

ugcnetcse-dec2004-paper2

Answer key

### 3.0.6 UGC NET CSE | December 2006 | Part 2 | Question: 40 top

Loading operating system from secondary memory to primary memory is called _____ .

A. Compiling B. Booting C. Refreshing D. Reassembling

ugcnetcse-dec2006-paper2

Answer key

### 3.0.7 UGC NET CSE | December 2006 | Part 2 | Question: 39 top

A permanent database of a general model of compiler is _____ .

A. Identifier table
B. Page map table
C. Literal table
D. Terminal table

ugcnetcse-dec2006-paper2

### 3.0.8 UGC NET CSE | December 2006 | Part 2 | Question: 35 top

Peer-hole optimization is a form of :

A. loop optimization
B. local optimization
C. constant folding
D. data flow analysis

ugcnetcse-dec2006-paper2

Answer key

### 3.0.9 UGC NET CSE | December 2006 | Part 2 | Question: 33 top

A compiler for a high level language that runs on one machine and produces code for a different machine is called :

A. Optimizing
B. One pass compiler
C. Cross compiler
D. Multipass compiler

ugcnetcse-dec2006-paper2

Answer key

### 3.0.10 UGC NET CSE | December 2004 | Part 2 | Question: 34 top

Which activity is included in the first pass of two pass assemblers?

A. Build the symbol table
B. Construct the intermediate code
C. Separate mnemonic opcode and operand fields
D. None of these

ugcnetcse-dec2004-paper2

Answer key

### 3.0.11 UGC NET CSE | December 2006 | Part 2 | Question: 32 top

Which of the following is the most general phase-structured grammar ?

A. Regular B. Context-sensitive C. Context free D. Syntax tree

ugcnetcse-dec2006-paper2

Answer key

### 3.0.12 UGC NET CSE | December 2007 | Part 2 | Question: 34 top

Top-down parsers are predictive parsers, because :

A. next tokens are predicted
B. length of the parse tree is predicted before hand
C. lowest node in the parse tree is predicted
D. next lower level of the parse tree is predicted

ugcnetcse-dec2007-paper2

Answer key

### 3.0.13 UGC NET CSE | June 2013 | Part 2 | Question: 23 top

The equivalent production rules corresponding to the production rules $S \rightarrow S\alpha_1 \mid S\alpha_2 \mid \beta_1 \mid \beta_2$ is

A. $S \rightarrow \beta_1 \mid \beta_2, A \rightarrow \alpha_1 A \mid \alpha_2 A \mid \lambda$
B. $S \rightarrow \beta_1 \mid \beta_2 \mid \beta_1 A \mid \beta_2 A, A \rightarrow \alpha_1 A \mid \alpha_2 A$
C. $S \rightarrow \beta_1 \mid \beta_2, A \rightarrow \alpha_1 A \mid \alpha_2 A$
D. $S \rightarrow \beta_1 \mid \beta_2 \mid \beta_1 A \mid \beta_2 A, A \rightarrow \alpha_1 A \mid \alpha_2 A \mid \lambda$

ugcnetcse-june2013-paper2 compiler-design

Answer key

### 3.0.14 UGC NET CSE | December 2007 | Part 2 | Question: 32 top

A single instruction in an assembly language program contains :

A. one micro operation
B. one macro operation
C. one instruction to be completed in a single pulse
D. one machine code instruction

ugcnetcse-dec2007-paper2

### 3.0.15 UGC NET CSE | December 2007 | Part 2 | Question: 31 top

In a two pass compiler, during the first pass :

A. user defined address symbols are correlated with their binary equivalent
B. the syntax of the statement is checked and mistakes, if any, are listed
C. object program is generated
D. semantic of the source program is elucidated

ugcnetcse-dec2007-paper2

Answer key

### 3.0.16 UGC NET CSE | October 2020 | Part 2 | Question: 74 top

Find the lexicographic ordering of the bit strings given below based on the ordering $0 < 1$.

a. $001$
b. $010$
c. $011$
d. $0001$
e. $0101$

Choose the correct answer from the options given below:

A. $001 < 010 < 011 < 0001 < 0101$
B. $0001 < 001 < 010 < 0101 < 011$
C. $0001 < 0101 < 001 < 010 < 011$
D. $001 < 010 < 0001 < 0101 < 011$

ugcnetcse-oct2020-paper2 compiler-design

Answer key

### 3.0.17 UGC NET CSE | December 2007 | Part 2 | Question: 33 top

Absolute loader demands that the programmer needs to know the :

A. start address of the available main memory
B. total size of the program
C. actual address of the data location
D. absolute values of the operands used

ugcnetcse-dec2007-paper2

Answer key

### 3.0.18 UGC NET CSE | June 2008 | Part 2 | Question: 33 top

**At the end of parsing,**

**(A) tokens are identified.**

**(B) set of instructions are identified.**

**(C) the syntactic groups are identified.**

**(D) machine instructions are identified.**

ugcnetcse-june2008-paper2

Answer key

### 3.0.19 UGC NET CSE | June 2009 | Part 2 | Question: 32 top

The linker :

A. is similar to interpreter
B. uses source code as its input
C. is required to create a load module
D. none of the above

ugcnetcse-june2009-paper2

Answer key

### 3.0.20 UGC NET CSE | June 2006 | Part 2 | Question: 4 top

The logic of pumping lemma is a good example of :

A. pigeon hole principle
B. recursion
C. divide and conque technique
D. iteration

ugcnetcse-june2006-paper2 compiler-design

Answer key

### 3.0.21 UGC NET CSE | December 2013 | Part 2 | Question: 29 top

The process of assigning load addresses to the various parts of the program and adjusting the code and data in the program to reflect the assigned address is called

A. Symbol resolution
B. Parsing
C. Assembly
D. Relocation

ugcnetcse-dec2013-paper2 compiler-design

Answer key

### 3.0.22 UGC NET CSE | Junet 2015 | Part 2 | Question: 35 top

Which phase of compiler generates stream of atoms?

A. Syntax Analysis
B. Lexical Analysis
C. Code Generation
D. Code Optimization

ugcnetcse-june2015-paper2 compiler-design

Answer key

### 3.0.23 UGC NET CSE | December 2013 | Part 3 | Question: 17 top

The compiler converts all operands upto the type of the largest operand is called

A. Type Promotion
B. Type Evaluation
C. Type Conversion
D. Type Declaration

ugcnetcse-dec2013-paper3 compiler-design

Answer key

### 3.0.24 UGC NET CSE | November 2017 | Part 2 | Question: 35 top

Match the description of several parts of a classic optimizing compiler in **List-I**, with the names of those parts in **List-II** :

| | **List-I** | | **List-II** |
|---|---|---|---|
| (a) | A part of a compiler that is responsible for recognizing syntax. | (i) | Optimizer |
| (b) | A part of a compiler that takes as input a stream of characters and produces as output a stream of words along with their associated syntactic categories. | (ii) | Semantic Analysis |
| (c) | A part of a compiler that understand the meanings of variable names and other symbols and checks that they are used in ways consistent with their definitions. | (iii) | Parser |
| (d) | An IR-to-IR transformer that tries to improve the IR program in some way (Intermediate Representation). | (iv) | Scanner |

**Code :**

A. (a)-(iii); (b)-(iv); (c)-(ii); (d)-(i)
B. (a)-(iv); (b)-(iii); (c)-(ii); (d)-(i)
C. (a)-(ii); (b)-(iv); (c)-(i); (d)-(iii)
D. (a)-(ii); (b)-(iv); (c)-(iii); (d)-(i)

ugcnetcse-nov2017-paper2 compiler-design

Answer key

### 3.0.25 Which activity is not included in the first pass of two pass assemblers (UGC NET Dec 04) top

Q1. Which activity is not included in the first pass of two pass assemblers?
(A) Build the symbol table
(B) Construct the intermediate code
(C) Separate mnemonic opcode and operand fields
(D) None of the above

### 3.0.26 UGC NET CSE | December 2004 | Part 2 | Question: 35 top

In two pass assembler the symbol table is used to store :

A. Label and value B. Only value C. Mnemonic D. Memory Location

ugcnetcse-dec2004-paper2

Answer key

## 3.1 Chomsky Normal Form (1) top

### 3.1.1 Chomsky Normal Form: UGC NET CSE | December 2012 | Part 3 | Question: 53 top

If the parse tree of a word w generated by a Chomsky form grammar has no path of length greater than i, then the word w is of length

A. no greater than $2^{i+1}$
B. no greater than $2^{i}$
C. no greater than $2^{i-1}$
D. no greater than $i$

chomsky-normal-form ugcnetcse-dec2012-paper3 parsing

Answer key

## 3.2 Code Optimization (1) top

### 3.2.1 Code Optimization: UGC NET CSE | December 2012 | Part 2 | Question: 11 top

In compiler design 'reducing the strength' refers to

A. reducing the range of values of input variables
B. code optimization using cheaper machine instructions
C. reducing efficiency of program
D. none of the above

code-optimization ugcnetcse-dec2012-paper2 compiler-design

Answer key

## 3.3 Compilation Phases (1) top

### 3.3.1 Compilation Phases: UGC NET CSE | August 2016 | Part 2 | Question: 33 top

In compiler optimization, operator strength reduction uses mathematical identities to replace slow math operations with faster operations. Which of the following code replacements is an illustration of operator strength reduction ?

A. Replace $P+P$ by $2^*P$ or Replace $3+4$ by $7$.
B. Replace $P^*32$ by $P<<5$
C. Replace $P^*0$ by $0$
D. Replace $(P<<4)-P$ by $P^*15$

ugcnetcse-aug2016-paper2 compiler-design compilation-phases

Answer key

## 3.4 Compiler Optimization (2) top

### 3.4.1 Compiler Optimization: UGC NET CSE | December 2015 | Part 2 | Question: 41 top

Loop unrolling is a code optimization technique:

A. that avoids tests at every iteration of the loop
B. that improves preformance by decreasing the number of instructions in a basic block
C. that exchanges inner loops with outer loops
D. that reorders operations to allow multiple computations to happen in parallel

ugcnetcse-dec2015-paper2 compiler-design compiler-optimization

Answer key

### 3.4.2 Compiler Optimization: UGC NET CSE | June 2016 | Part 2 | Question: 33 top

In ____, the bodies of the two loops are merged together to form a single loop provided that they do not make any references to each other.

A. Loop unrolling
B. Strength reductions
C. Loop concatenation
D. Loop jamming

ugcnetcse-june2016-paper2 compiler-design compiler-optimization

Answer key

## 3.5 Constant Folding (1) top

### 3.5.1 Constant Folding: UGC NET CSE | June 2019 | Part 2 | Question: 73 top

Replacing the expression $4*2\cdot 14$ by $8\cdot 56$ is known as

A. constant folding
B. induction variable
C. strength reduction
D. code reduction

ugcnetcse-june2019-paper2 code-optimization constant-folding

Answer key

## 3.6 Control Flow Graph (1) top

### 3.6.1 Control Flow Graph: UGC NET CSE | December 2013 | Part 3 | Question: 4 top

Given a flow graph with 10 nodes, 13 edges and one connected components, the number of regions and the number of predicate (decision) nodes in the flow graph will be

A. 4, 5
B. 5, 4
C. 3, 1
D. 13, 8

ugcnetcse-dec2013-paper3 compiler-design control-flow-graph

Answer key

## 3.7 Grammar (5) top

### 3.7.1 Grammar: UGC NET CSE | December 2009 | Part 2 | Question: 32 top

Which of the following grammar is LR (1) ?

(A) A --> a A b, A --> b A b, A --> a , A --> b

(B) A --> a A a, A --> a A b, A --> c

(C) A --> A + A, A --> a

(D) Both (A) and (B)

ugcnetcse-dec2009-paper2 compiler-design grammar

### 3.7.2 Grammar: UGC NET CSE | December 2009 | Part 2 | Question: 35 top

Synthesized attribute can be easily simulated by a

(A) LL grammar

(B) Ambiguous grammar

(C) LR grammar

(D) None of the above

ugcnetcse-dec2009-paper2 compiler-design grammar

Answer key

### 3.7.3 Grammar: UGC NET CSE | December 2015 | Part 3 | Question: 24 top

The language of all non-null strings of a's can be defined by a context free grammar as follow :
$S \rightarrow a\,S \mid S\,a \mid a$
The word $a^3$ can be generated by _____ different trees.

A. Two
B. Three
C. Four
D. Five

compiler-design grammar ugcnetcse-dec2015-paper3

Answer key

### 3.7.4 Grammar: UGC NET CSE | June 2010 | Part 2 | Question: 34 top

Which of the following is the most general phase structured grammar ?

A. Regular
B. Context-sensitive
C. Context free
D. None of the above

ugcnetcse-june2010-paper2 compiler-design grammar

Answer key

### 3.7.5 Grammar: UGC NET CSE | June 2014 | Part 2 | Question: 06 top

A grammar $G$ is $LL(1)$ if and only if the following conditions hold for two distinct productions $A \rightarrow \alpha \mid \beta$

I. First $(\alpha) \cap$ First $(\beta) \neq \{a\}$ where $a$ is some terminal symbol of the grammar.

II. First $(\alpha) \cap$ First $(\beta) \neq \lambda$

III. First $(\alpha) \cap$ Follow $(A) = \phi$ if $\lambda \in$ First $(\beta)$

A. I and II
B. I and III
C. II and III
D. I, II and III

ugcnetcse-june2014-paper2 compiler-design grammar parsing

Answer key

## 3.8 Infix Prefix (1) top

### 3.8.1 Infix Prefix: UGC NET CSE | June 2012 | Part 2 | Question: 1 top

The postfix expression AB + CD -* can be evaluated using a

A. stack
B. tree
C. queue
D. linked list

ugcnetcse-june2012-paper2 compiler-design infix-prefix

Answer key

## 3.9 Intermediate Code (1) top

### 3.9.1 Intermediate Code: UGC NET CSE | October 2020 | Part 2 | Question: 30 top

Which of the following is not an intermediate code form?

A. Syntax trees
B. Three address codes
C. Quadrupules
D. Post fix Notation

ugcnetcse-oct2020-paper2 compiler-design intermediate-code

Answer key

## 3.10 Lexical Analysis (3) top

### 3.10.1 Lexical Analysis: UGC NET CSE | December 2014 | Part 3 | Question: 20 top

How many tokens will be generated by the scanner for the following statement ?

$x = x * (a + b) - 5;$

A. $12$
B. $11$
C. $10$
D. $07$

ugcnetcse-dec2014-paper3 compiler-design lexical-analysis

Answer key

### 3.10.2 Lexical Analysis: UGC NET CSE | January 2017 | Part 2 | Question: 33 top

Consider the following statements related to compiler construction:

I. Lexical Analysis is specified by context-free grammars and implemented by pushdown automata.

II. Syntax Analysis is specified by regular expressions and implemented by finite-state machine.

Which of the above statement(s) is/are correct?

A. Only I
B. Only II
C. Both I and II
D. Neither I nor II

ugcnetjan2017ii compiler-design lexical-analysis

Answer key

### 3.10.3 Lexical Analysis: UGC NET CSE | June 2010 | Part 2 | Question: 35 top

Which of the following is used for grouping of characters into tokens (in a computer) ?

A. A parser B. Code optimizer C. Code generator D. Scanner

ugcnetcse-june2010-paper2 compiler-design lexical-analysis

Answer key

## 3.11 Linker (1) top

### 3.11.1 Linker: UGC NET CSE | August 2016 | Part 2 | Question: 34 top

Which of the following are the principles tasks of the linker ?

I. Resolve external references among separately compiled program units.

II. Translate assembly language to machine code.

III. Relocate code and data relative to the beginning of the program.

IV. Enforce access-control restrictions on system libraries.

A. $I$ and $II$ B. $I$ and $III$ C. $II$ and $III$ D. $I$ and $IV$

ugcnetcse-aug2016-paper2 compiler-design linker

Answer key

## 3.12 Lr Parser (2) top

### 3.12.1 Lr Parser: UGC NET CSE | December 2006 | Part 2 | Question: 34 top

The 'K' in LR (K) cannot be :

A. $0$ B. $1$ C. $2$ D. None of these

ugcnetcse-dec2006-paper2 lr-parser compiler-design

Answer key

### 3.12.2 Lr Parser: UGC NET CSE | December 2014 | Part 2 | Question: 32 top

Which of the following is true ?

A. Canonical $LR$ parser is $LR(1)$ parser with single look ahead terminal
B. All $LR(K)$ parsers with $K > 1$ can be transformed into $LR(1)$ parsers.
C. Both $(A)$ and $(B)$
D. None of the above

ugcnetcse-dec2014-paper2 compiler-design lr-parser

Answer key

## 3.13 Machine Instructions (1) top

### 3.13.1 Machine Instructions: UGC NET CSE | December 2015 | Part 2 | Question: 42 top

What will be the hexadecimal value in the register $ax$ (32-bit) after executing the following instructions?

mov al, 15

mov ah, 15

xor al, al

mov cl, 3

shr ax, cl

A. 0F00 h B. 0F0F h C. 01E0 h D. FFFF h

ugcnetcse-dec2015-paper2 machine-instructions compiler-design

Answer key

## 3.14 Parameter Passing (2) top

### 3.14.1 Parameter Passing: UGC NET CSE | August 2016 | Part 3 | Question: 21 top

Assume that the program '$P'$ is implementing parameter passing with 'call by reference'. What will be printed by following print statements in $P$?

```
Program P
{
   x=10;
   y=3;
   funb(y,x,x)
   print x;
   print y;
}
funb (x,y,z)
{
   y=y+4;
   z=x+y+z;
}
```

A. 10, 7 B. 31, 3 C. 10, 3 D. 31, 7

ugcnetcse-aug2016-paper3 parameter-passing

Answer key

### 3.14.2 Parameter Passing: UGC NET CSE | December 2014 | Part 3 | Question: 19 top

Consider the following statements $S1, S2$ and $S3$:

$S1$: In call-by-value, anything that is passed into a function call is unchanged in the caller's scope when the function returns.

$S2$: In call-by-reference, a function receives implicit reference to a variable used as argument.

$S3$: In call-by-reference, caller is unable to see the modified variable used as argument.

A. $S3$ and $S2$ are true.
B. $S3$ and $S1$ are true.
C. $S2$ and $S1$ are true.
D. $S1, S2, S3$ are true.

ugcnetcse-dec2014-paper3 compiler-design runtime-environment parameter-passing

Answer key

## 3.15 Parsing (11) top

### 3.15.1 Parsing: UGC NET CSE | December 2009 | Part 2 | Question: 33 top

A shift-reduce parser carries out the actions specified within braces immediately after reducing with the corresponding rule of the grammar.

S --> x x W [ print "1"]
S --> y [print "2"]
W --> S2 [print "3"],

what is the translation of "x x x y z z" ?
(A) 1 1 2 3 1

(B) 1 1 2 3 3

(C) 2 3 1 3 1

(D) 2 3 3 2 1

ugcnetcse-dec2009-paper2 compiler-design parsing

### 3.15.2 Parsing: UGC NET CSE | December 2012 | Part 2 | Question: 18 top

Given the following expressions of a grammar

$E \rightarrow E * F/F + E/F$

$F \rightarrow F - F/id$

Which of the following is true?

A. $*$ has the higher precedence than +
B. - has the higher precedence than $*$
C. + and – have same precedence
D. + has the higher precedence than $*$

ugcnetcse-dec2012-paper2 compiler-design parsing

Answer key

### 3.15.3 Parsing: UGC NET CSE | December 2012 | Part 2 | Question: 27 top

Which of the following is true while converting CFG to an LL(1) grammar?

A. Removing left recursion alone
B. Factoring the grammar alone
C. Removing left recursion and factoring the grammar
D. None of the above

ugcnetcse-dec2012-paper2 compiler-design parsing

Answer key

### 3.15.4 Parsing: UGC NET CSE | December 2013 | Part 2 | Question: 26 top

Given the following statements:

$S_1$: SLR uses follow information to guide reductions. In case of LR and LALR parsers, the look-aheads are associated with the items and they make use of the left context available to the parser.

$S_2$: LR grammar is a large subclass of context free grammar as compared to that SLR and LALR grammars.

Which of the following is true?

A. $S_1$ is not correct and $S_2$ is not correct.
B. $S_1$ is not correct and $S_2$ is correct.
C. $S_1$ is correct and $S_2$ is not correct.
D. $S_1$ is correct and $S_2$ is correct

ugcnetcse-dec2013-paper2 compiler-design parsing

Answer key

### 3.15.5 Parsing: UGC NET CSE | December 2015 | Part 2 | Question: 43 top

Which of the following statements is false?

A. Top-down parsers are LL parsers where first L stands for left-to-right scan and second L stands for a leftmost derivation
B. (000)* is a regular expression that matches only strings containing an odd number of zeroes, including the empty string
C. Bottom-up parsers are in the LR family, where L stands for left-to-right scan and R stands for rightmost derivation
D. The class of context-free languages is closed under reversal. That is, if L is any context-free language, then the language $L^R = \{w^R : w \varepsilon L\}$ is context-free

ugcnetcse-dec2015-paper2 compiler-design parsing

Answer key

### 3.15.6 Parsing: UGC NET CSE | December 2018 | Part 2 | Question: 39 top

Consider the following grammar $G$:

- $S \rightarrow A \mid B$
- $A \rightarrow a \mid c$
- $B \rightarrow b \mid c$

where $\{S, A, B\}$ is the set of non-terminals, $\{a, b, c, \}$ is the set of terminals.
Which of the following statement(s) is/are correct?

- $S_1$: $LR(1)$ can parse all strings that are generated using grammar $G$.
- $S_2$: $LL(1)$ can parse all strings that are generated using grammar $G$.

Choose the correct answer from the code given below:

A. Only $S_1$ B. Only $S_2$ C. Both $S_1$ and $S_2$ D. Neither $S_1$ nor $S_2$

ugcnetcse-dec2018-paper2 parsing

Answer key

### 3.15.7 Parsing: UGC NET CSE | July 2018 | Part 2 | Question: 39 top

A bottom-up parser generates:

A. Left-most derivation in reverse
B. Right-most derivation in reverse
C. Left-most derivation
D. Right-most derivation

ugcnetcse-july2018-paper2 compiler-design parsing

Answer key

### 3.15.8 Parsing: UGC NET CSE | June 2014 | Part 2 | Question: 07 top

Which of the following suffices to convert an arbitrary $CFG$ to an $LL(1)$ grammar ?

A. Removing left recursion alone
B. Removing the grammar alone
C. Removing left recursion and factoring the grammar
D. None of the above

ugcnetcse-june2014-paper2 compiler-design parsing

Answer key

### 3.15.9 Parsing: UGC NET CSE | June 2014 | Part 2 | Question: 08 top

A shift reduce parser suffers from

A. Shift reduce conflict only
B. Reduce reduce conflict only
C. Both shift reduce conflict and reduce reduce conflict
D. Shift handle and reduce handle conflicts

ugcnetcse-june2014-paper2 compiler-design parsing

Answer key

### 3.15.10 Parsing: UGC NET CSE | June 2016 | Part 2 | Question: 35 top

Which of the following is false?

A. The grammar $S \rightarrow a\,Sb \mid bSa \mid SS \mid \in$, where $S$ is the only non-terminal symbol and $\in$ is the null string, is ambiguous
B. SLR is powerful than LALR
C. An LL(1) parser is a top-down parser
D. YACC tool is an LALR(1) parser generator

ugcnetcse-june2016-paper2 compiler-design parsing

Answer key

### 3.15.11 Parsing: UGC NET CSE | Junet 2015 | Part 2 | Question: 34 top

Which one of the following is false?

A. LALR parser is Bottom-Up parser
B. A parsing algorithm which performs a left to right scanning and a right most deviation is RL$(1)$

C. LR parser is Bottom-Up parser
D. In LL($1$), the $1$ indicates that there is a one symbol look-ahead

ugcnetcse-june2015-paper2 compiler-design parsing

Answer key

## 3.16 Quadruple Representation (1) top

### 3.16.1 Quadruple Representation: UGC NET CSE | June 2019 | Part 2 | Question: 72 top

On translating the expression given below into quadruple representation, how many operations are required?

$$(i * j) + (e + f) * (a * b + c)$$

A. $5$ B. $6$ C. $3$ D. $7$

ugcnetcse-june2019-paper2 intermediate-code quadruple-representation

Answer key

## 3.17 Runtime Environment (1) top

### 3.17.1 Runtime Environment: UGC NET CSE | January 2017 | Part 2 | Question: 35 top

Which of the following statement(s) regarding a linker software is/are true ?

I. A function of a linker is to combine several object modules into a single load module.

II. A function of a linker is to replace absolute references in an object module by symbolic references to locations in other modules.

A. Only I
B. Only II
C. Both I and II
D. Neither I nor II

ugcnetjan2017ii runtime-environment compiler-design

Answer key

## 3.18 Shift Reduce Parser (2) top

### 3.18.1 Shift Reduce Parser: UGC NET CSE | December 2014 | Part 2 | Question: 31 top

Shift-Reduce parsers perform the following :

A. Shift step that advances in the input stream by $K(K > 1)$ symbols and Reduce step that applies a completed grammar rule to some recent parse trees, joining them together as one tree with a new root symbol.
B. Shift step that advances in the input stream by one symbol and Reduce step that applies a completed grammar rule to some recent parse trees, joining them together as one tree with a new root symbol.
C. Shift step that advances in the input stream by $K(K = 2)$ symbols and Reduce step that applies a completed grammar rule to form a single tree.
D. Shift step that does not advance in the input stream and Reduce step that applies a completed grammar rule to form a single tree.

ugcnetcse-dec2014-paper2 shift-reduce-parser

Answer key

### 3.18.2 Shift Reduce Parser: UGC NET CSE | June 2019 | Part 2 | Question: 74 top

Shift-reduce parser consists of

a. input buffer b. stack c. parse table

Choose the correct option from those given below:

A. a and b only B. a and c only C. c only D. a, b and c

ugcnetcse-june2019-paper2 shift-reduce-parser

Answer key

## 3.19 Symbol Table (2) top

### 3.19.1 Symbol Table: UGC NET CSE | June 2019 | Part 2 | Question: 71 top

Which data structure is used by the compiler for managing variables and their attributes?

A. Binary tree B. Link list C. Symbol table D. Parse table

ugcnetcse-june2019-paper2 symbol-table

Answer key

### 3.19.2 Symbol Table: UGC NET CSE | October 2020 | Part 2 | Question: 41 top

Which of the following are applications of symbol table?

a. Storage allocation b. Checking type compatibility c. Suppressing duplicate error messages

Choose the correct answer from the options given below:

A. $(a)$ and $(b)$ only B. $(a)$ and $(c)$ only C. $(b)$ and $(c)$ only D. $(a)$ $(b)$ and $(c)$

ugcnetcse-oct2020-paper2 compiler-design symbol-table

Answer key

## 3.20 System Software& Compilers (1) top

### 3.20.1 System Software& Compilers: UGC NET CSE | June 2010 | Part 2 | Question: 31 top

In an absolute loading scheme, which loader function is accomplished by a loader ?

A. Re-allocation B. Allocation C. Linking D. Loading

ugcnetcse-june2010-paper2 system-software&-compilers compiler-design runtime-environment

Answer key

## 3.21 Translator (1) top

### 3.21.1 Translator: UGC NET CSE | Junet 2015 | Part 2 | Question: 32 top

The translator which performs macro calls expansion is called

A. Macro processor
B. Micro pre-processor
C. Macro pre-processor
D. Dynamic linker

ugcnetcse-june2015-paper2 translator preprocessor

Answer key

## 3.22 Two Pass Assembler (1) top

### 3.22.1 Two Pass Assembler: UGC NET CSE | December 2014 | Part 2 | Question: 33 top

In a two-pass assembler, symbol table is

A. Generated in first pass
B. Generated in second pass
C. Not generated at all
D. Generated and used only in second pass

ugcnetcse-dec2014-paper2 two-pass-assembler

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 3.0.1 | B | 3.0.2 | Q-Q | 3.0.3 | D | 3.0.4 | Q-Q | 3.0.5 | Q-Q |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 3.0.6 | Q-Q | 3.0.7 | Q-Q | 3.0.8 | Q-Q | 3.0.9 | C | 3.0.10 | Q-Q |
| 3.0.11 | Q-Q | 3.0.12 | Q-Q | 3.0.13 | D | 3.0.14 | Q-Q | 3.0.15 | Q-Q |
| 3.0.16 | B | 3.0.17 | Q-Q | 3.0.18 | Q-Q | 3.0.19 | Q-Q | 3.0.20 | Q-Q |
| 3.0.21 | D | 3.0.22 | B | 3.0.23 | A | 3.0.24 | A | 3.0.25 | Q-Q |
| 3.0.26 | Q-Q | 3.1.1 | C | 3.2.1 | B | 3.3.1 | Q-Q | 3.4.1 | A |
| 3.4.2 | D | 3.5.1 | A | 3.6.1 | B | 3.7.1 | Q-Q | 3.7.2 | Q-Q |
| 3.7.3 | D | 3.7.4 | Q-Q | 3.7.5 | D | 3.8.1 | A | 3.9.1 | X |
| 3.10.1 | A | 3.10.2 | D | 3.10.3 | Q-Q | 3.11.1 | Q-Q | 3.12.1 | Q-Q |
| 3.12.2 | C | 3.13.1 | C | 3.14.1 | Q-Q | 3.14.2 | C | 3.15.1 | Q-Q |
| 3.15.2 | B | 3.15.3 | C | 3.15.4 | D | 3.15.5 | B | 3.15.6 | D |
| 3.15.7 | Q-Q | 3.15.8 | D | 3.15.9 | C | 3.15.10 | B | 3.15.11 | B |
| 3.16.1 | B | 3.17.1 | A | 3.18.1 | B | 3.18.2 | D | 3.19.1 | C |
| 3.19.2 | D | 3.20.1 | Q-Q | 3.21.1 | C | 3.22.1 | A | | |

### 4.0.1 UGC NET CSE | June 2012 | Part 2 | Question: 34 top

Checksum used along with each packet computes the sum of the data, where data is treated as a sequence of

A. Integer B. Character C. Real numbers D. Bits

computer-networks ugcnetcse-june2012-paper2

Answer key

### 4.0.2 UGC NET CSE | December 2015 | Part 2 | Question: 22 top

Which of the following fields in IPv 4 datagram is not related to fragmentation?

A. Type of service
B. Fragment offset
C. Flags
D. Indentification

ugcnetcse-dec2015-paper2 computer-networks

Answer key

### 4.0.3 UGC NET CSE | June 2010 | Part 2 | Question: 46 top

The cost of the network is usually determined by

A. Time complexity
B. Switching complexity
C. circuit complexity
D. none of these

ugcnetcse-june2010-paper2 computer-networks

### 4.0.4 UGC NET CSE | December 2018 | Part 2 | Question: 63 top

Consider $ISO - OSI$ network architecture reference model. Session layer of this model offers dialog control, token management and _____ as services.

A. Syncronization B. Asyncronization C. Flow control D. Errors

ugcnetcse-dec2018-paper2 computer-networks

Answer key

### 4.0.5 UGC NET CSE | June 2012 | Part 2 | Question: 5 top

Networks that use different technologies can be connected by using

A. Packets B. Switches C. Bridges D. Routers

ugcnetcse-june2012-paper2 computer-networks

Answer key

### 4.0.6 UGC NET CSE | June 2012 | Part 2 | Question: 14 top

Which of the following TCP/IP Internet protocol does diskless machine uses to obtain its IP address from a server?

A. RAP B. RIP C. ARP D. X.25

ugcnetcse-june2012-paper2 computer-networks

Answer key

### 4.0.7 UGC NET CSE | September 2013 | Part 2 | Question: 5 top

The ____ is a set of standards that defines how a dynamic web document should be written, how input data should be supplied to the program, and how the output result should be used.

A. Hyper Text Markup Language
B. File Transfer Protocol

C. Hyper Text Transfer Protocol

D. Common Gateway Interface

ugcnetsep2013ii computer-networks

Answer key

### 4.0.8 UGC NET CSE | June 2016 | Part 3 | Question: 28 top

Match the following :

| | | | |
|---|---|---|---|
| (a) | Line Coding | (i) | A technique to change analog signal to digital data |
| (b) | Block Coding | (ii) | Provides synchronization without increasing number of bits |
| (c) | Scrambling | (iii) | Process of converting digital data to digital signal |
| (d) | Pulse code Modulation | (iv) | Provides redundancy to ensure synchronization and inherits error detection |

**Codes :**

A. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

B. (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)

C. (a)-(i), (b)-(iii), (c)-(ii), (d)-(iv)

D. (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)

ugcnetcse-june2016-paper3 computer-networks

Answer key

### 4.0.9 UGC NET 2013 top

In the _____method , after the station finds the line idle , it sends or refrains from sending based on probability

a)None-Persistent

b)One -Persistent

c) P-Persistent

d)Non-Persistent

Answer key

### 4.0.10 UGC NET CSE | June 2016 | Part 3 | Question: 25 top

If link transmits 4000 frames per scond and each slot has 8 bits , the transmission rate of circuits of this TDM is _____

A. 64 Kbps

B. 32 Mbps

C. 32 Kbps

D. 64 Mbps

ugcnetcse-june2016-paper3 computer-networks

Answer key

### 4.0.11 UGC NET CSE | December 2007 | Part 2 | Question: 4 top

Let e : B^m → B^n is a group code. The minimum distance of ‘e’ is equal to :

A. the maximum weight of a non zero code word

B. the minimum weight of a non zero code word

C. m

D. n

ugcnetcse-dec2007-paper2

Answer key

### 4.0.12 UGC NET CSE | December 2011 | Part 2 | Question: 40 top

Identify the incorrect statement :

A. The ATM adoption layer is not service dependent.
B. Logical connections in ATM are referred to as virtual channel connections.
C. ATM is streamlined protocol with minimal error and flow control capabilities.
D. ATM is also known as cell delays.

computer-networks

Answer key

## 4.0.13 UGC NET CSE | December 2011 | Part 2 | Question: 42 top

The number of bits required for an $IP_{V_6}$ address is

A. $16$ B. $32$ C. $64$ D. $128$

computer-networks

Answer key

## 4.0.14 UGC NET CSE | November 2017 | Part 3 | Question: 28 top

Match the following :

| | **List-I** | | **List-II** |
|---|---|---|---|
| (a) | Data Link Layer | (i) | Encryption |
| (b) | Network Layer | (ii) | Connection control |
| (c) | Transport Layer | (iii) | Routing |
| (d) | Presentation Layer | (iv) | Framing |

**Code :**

A. (a)-(iv); (b)-(iii); (c)-(i); (d)-(ii)
B. (a)-(iii); (b)-(iv); (c)-(ii); (d)-(i)
C. (a)-(iv); (b)-(ii); (c)-(iii); (d)-(i)
D. (a)-(iv); (b)-(iii); (c)-(ii); (d)-(i)

ugcnetcse-nov2017-paper3 computer-networks

Answer key

## 4.0.15 UGC NET CSE | June 2010 | Part 2 | Question: 27 top

What does the URL need to access documents ?

I. Path name

II. Host name

III. DNS

IV. Retrieval method

V. Server port number

A. $I, II, III$ B. $I, III, V$ C. $I, II, IV$ D. $III, IV, V$

ugcnetcse-june2010-paper2 computer-networks

Answer key

## 4.0.16 UGC NET CSE | December 2015 | Part 2 | Question: 23 top

Four channels are multiplexed using TDM. If each channel sends 100 bytes/second and we multiplex 1 byte per channel, then the bit rate for the link is

A. 400 bps B. 800 bps C. 1600 bps D. 3200 bps

ugcnetcse-dec2015-paper2 computer-networks

Answer key

## 4.0.17 UGC NET CSE | June 2016 | Part 3 | Question: 26 top

Given the following statements:

a. Frequency Division Multiplexing is a technique that can be applied when a bandwidth of a link is greater than combined bandwidth of signals to be transmitted
b. Wavelength Division Multiplexing (WDM) is an analogue multiplexing technique to combine optical signals
c. WDM is a digital multiplexing technique
d. TDM is a digital multiplexing technique

Which of the following is correct?

A. a, b, c and d are true
B. a, b, c and d are false
C. a, b, and d are false; c is true
D. a, b, and d are true; c is false

ugcnetcse-june2016-paper3 computer-networks

Answer key

## 4.0.18 UGC NET CSE | June 2012 | Part 3 | Question: 54 top

What is the size (in terms of bits) of Header length field in IPV4 header?

A. 2
B. 4
C. 8
D. 16

ugcnetcse-june2012-paper3 computer-networks

Answer key

## 4.0.19 UGC NET CSE | December 2004 | Part 2 | Question: 27 top

Making sure that all the data packets of a message are delivered to the destination is _____ control.

A. Error
B. Loss
C. Sequence
D. Duplication

ugcnetcse-dec2004-paper2

Answer key

## 4.0.20 UGC NET CSE | December 2013 | Part 2 | Question: 43 top

Which of the following is widely used inside the telephone system for long-haul data traffic?

A. ISDN
B. ATM
C. Frame Relay
D. ISTN

ugcnetcse-dec2013-paper2 computer-networks

Answer key

## 4.0.21 UGC NET CSE | June 2013 | Part 2 | Question: 35 top

Give as good a big-O estimate as possible for the following functions:

$(n \log n + n^2)(n^3 + 2)$ and $(n! + 2^n)(n^3 + \log(n^2 + 1))$

A. $O(n^5 + 2n^2)$ & $O(n^3 * n!)$
B. $O(n^5)$ & $O(n^3 * 2^n)$
C. $O(n^5)$ & $O(n^3 * n!)$
D. $O(n^5 + 2n^2)$& $O(n^3 * 2^n)$

ugcnetcse-june2013-paper2

Answer key

## 4.0.22 UGC NET CSE | June 2014 | Part 3 | Question: 67 top

Ten signals, each requiring $3000$ Hz, are multiplexed on to a single channel using FDM. How much minimum bandwidth is required for the multiplexed channel ? Assume that the guard bands are $300$ Hz wide.

A. $30,000$
B. $32,700$
C. $33,000$
D. None of the above

ugcnetjune2014iii computer-networks

Answer key

## 4.0.23 UGC NET CSE | December 2007 | Part 2 | Question: 26 top

The best known example of a MAN is :

A. Ethernet B. Cable Television C. FDDI D. IEEE $802.3$

ugcnetcse-dec2007-paper2

Answer key

## 4.0.24 UGC NET CSE | December 2007 | Part 2 | Question: 27 top

In a broadcast network, a layer that is often thin or non-existent is :

A. network layer
B. transport layer
C. presentation layer
D. application layer

ugcnetcse-dec2007-paper2

Answer key

## 4.0.25 UGC NET CSE | October 2020 | Part 2 | Question: 88 top

Given below are two statements:

Statement $I$: The laws of nature put two fundamental limits on data rate of a channel. The H.Nyquist limit restricts the number of independent samples per second to twice the band-width in a Noiseless channel

Statement $II$: Shannon's major result about noised channel is that maximum data rate of a channel whose band width is $H$ Hz, and whose signal-to-noise ratio is $S/N$ is given by: Maximum number of bits/sec $= H \log_2(1 + \frac{S}{N})$

In the light of the above statements, choose the correct answer from the options given below

A. Both Statement $I$ and Statement $II$ are true
B. Both Statement $I$ and Statement $II$ are false
C. Statement $I$ is correct but Statement $II$ is false
D. Statement $I$ is incorrect but Statement $II$ is true

ugcnetcse-oct2020-paper2 computer-networks

Answer key

## 4.0.26 UGC NET CSE | December 2007 | Part 2 | Question: 28 top

The maximum data rate of binary signals on a noiseless $3\,KHz$ channel is :

A. $3000$ bps. B. $6000$ bps. C. $9000$ bps. D. $12,000$ bps.

ugcnetcse-dec2007-paper2

Answer key

## 4.0.27 UGC NET CSE | December 2006 | Part 2 | Question: 28 top

The network $198.78.41.0$ is a :

A. Class A Network
B. Class B Network
C. Class C Network
D. Class D Network

ugcnetcse-dec2006-paper2

Answer key

## 4.0.28 UGC NET CSE | December 2004 | Part 2 | Question: 26 top

Error control is needed at the transport layer because of potential error occurring _____.

A. from transmission line noise
B. in router

C. from out of sequency delivery

D. from packet losses

ugcnetcse-dec2004-paper2

Answer key

## 4.0.29 UGC NET CSE | June 2013 | Part 2 | Question: 17 top

In classful addressing, the IP address 190.255.254.254 belongs to

A. Class A

B. Class B

C. Class C

D. Class D

ugcnetcse-june2013-paper2 computer-networks

Answer key

## 4.0.30 UGC NET CSE | December 2004 | Part 2 | Question: 28 top

Which transport class should be used with a perfect network layer ?

A. $TP0$ and $TP2$

B. $TP1$ and $TP3$

C. $TP0, TP1, TP3$

D. $TP0, TP1, TP2, TP3, TP4$

ugcnetcse-dec2004-paper2

Answer key

## 4.0.31 UGC NET CSE | December 2007 | Part 2 | Question: 29 top

For pure ALOHA, the maximum channel utilization is :

A. $100\%$

B. $50\%$

C. $36\%$

D. $18\%$

ugcnetcse-dec2007-paper2

Answer key

## 4.0.32 UGC NET CSE | December 2007 | Part 2 | Question: 30 top

An example of an adaptive routing algorithm is :

A. distance vector routing

B. flooding

C. selective flooding

D. shortest path routing

ugcnetcse-dec2007-paper2

Answer key

## 4.0.33 UGC NET CSE | December 2015 | Part 3 | Question: 11 top

A network with bandwidth of $10$ Mbps can pass only an average of $15,000$ frames per minute with each frame carrying an average of $8,000$ bits. What is the throughput of this network ?

A. $2$ Mbps

B. $60$ Mbps

C. $120$ Mbps

D. $10$ Mbps

computer-networks ugcnetcse-dec2015-paper3

Answer key

## 4.0.34 UGC NET CSE | December 2006 | Part 2 | Question: 29 top

The subnet mask $255.255.255.192$

A. Extends the network portion to 16 bits

B. Extends the network portion to 26 bits

C. Extends the network portion to 36 bits

D. Has no effect on the network portion of an IP address

ugcnetcse-dec2006-paper2

Answer key

## 4.0.35 UGC NET CSE | December 2006 | Part 2 | Question: 26 top

How many $DS1$ signals are transported on a $DS3$ signal ?

A. $24$ B. $672$ C. $14$ D. $28$

ugcnetcse-dec2006-paper2

Answer key

## 4.0.36 UGC NET CSE | December 2004 | Part 2 | Question: 30 top

Virtual circuit is associated with a _____ service.

A. Connectionless
B. Error-free
C. Segmentation
D. Connection-oriented

ugcnetcse-dec2004-paper2

Answer key

## 4.0.37 UGC NET CSE | December 2004 | Part 2 | Question: 29 top

Which transport class should be used with residual-error network layer ?

A. $TP0, TP2$
B. $TP1, TP3$
C. $TP1, TP3, TP4$
D. $TP0, TP1, TP2, TP3, TP4$

ugcnetcse-dec2004-paper2

Answer key

## 4.0.38 UGC NET CSE | June 2016 | Part 2 | Question: 26 top

A multiplexer combines four 100-Kbps channels using a time slot of 2 bits. What is the bit rate?

A. 100 Kbps B. 200 Kbps C. 400 Kbps D. 1000 Kbps

ugcnetcse-june2016-paper2 computer-networks

Answer key

## 4.0.39 UGC NET CSE | December 2011 | Part 2 | Question: 39 top

All of the following are examples of real security and privacy risks except

A. Hackers B. Spam C. Viruses D. Identity theft

computer-networks

Answer key

## 4.0.40 UGC NET CSE | December 2006 | Part 2 | Question: 27 top

A $10\,\text{BASE-2}$ network is limited to :

A. $20$ bytes per data field
B. $30$ stations per segment
C. $40$ segments
D. $50$ feet of cable

ugcnetcse-dec2006-paper2

Answer key

## 4.0.41 UGC NET CSE | December 2018 | Part 2 | Question: 89 top

Identify the correct sequence in which the following packets are transmitted on the network by a host when a browser requests a webpage from a remote server, assuming that the host has just been restarted.

A. HTTP GET request, DNS query, TCP SYN
B. DNS query, HTTP GET request, TCP SYN
C. TCP SYN, DNS query, HTTP GET request
D. DNS query, TCP SYN, HTTP GET request

ugcnetcse-dec2018-paper2 computer-networks

Answer key

## 4.0.42 UGC NET CSE | June 2009 | Part 2 | Question: 08 top

To employ multi-access in $GSM$, users are given different :

1. time slots
2. bandpass filters
3. handsets
4. frequency bands

ugcnetcse-june2009-paper2

Answer key

## 4.0.43 UGC NET CSE | June 2009 | Part 2 | Question: 06 top

The throughput of pure $\mathrm{ALOHA}$ is given by :

A. $\mathrm{S=G}$
B. $\mathrm{S=e2G}$
C. $\mathrm{S=Ge2G}$
D. $\mathrm{Ge\text{-}2G}$

ugcnetcse-june2009-paper2 computer-networks

## 4.0.44 UGC NET CSE | June 2008 | Part 2 | Question: 29 top

**An example of a public key encryption algorithm is:**

**(A) Caesar cipher algorithm**

**(B) DES algorithm**

**(C) AES algorithm**

**(D) Knapsack algorithm**

ugcnetcse-june2008-paper2

Answer key

## 4.0.45 UGC NET CSE | July 2018 | Part 2 | Question: 44 top

Which of the following statements are true?

a. Advanced Mobile Phone System (AMPS) is a cellular phone system that uses CDMA and provides universal personnel c

A. a and b only
B. b and c only
C. a, b, and c
D. a and c only

ugcnetcse-july2018-paper2 computer-networks

Answer key

## 4.0.46 UGC NET CSE | June 2009 | Part 2 | Question: 29 top

$X.25$ protocol consists of :

A. Physical and Frame levels
B. Frame and Packet levels
C. Physical, Frame and Packet levels
D. None of the above

ugcnetcse-june2009-paper2

Answer key

## 4.0.47 UGC NET CSE | June 2008 | Part 2 | Question: 30 top

**With reference to hierarchical routing, the optimum number of levels for an m router subnet is:**

**(A)** $m^2$ **(B)** $m$

**(C)** $\ln m$ **(D)** $\sqrt{m}$

ugcnetcse-june2008-paper2

## 4.0.48 UGC NET CSE | June 2009 | Part 2 | Question: 47 top

A clustering technique that permits a convenient graphical display is :

A. partition based clustering
B. probabilistic model based clustering
C. hierarchical clustering
D. agglomerative clustering

ugcnetcse-june2009-paper2

Answer key

## 4.0.49 UGC NET CSE | December 2016 | Part 3 | Question: 73 top

Which of the following neural networks uses supervised learning?

a. Multilayer perceptron b. Self organizing feature map c. Hopfield network

A. a only B. b only C. a and b only D. a and c only

computer-networks

Answer key

## 4.0.50 UGC NET CSE | June 2009 | Part 2 | Question: 46 top

E-commerce includes :

A. $B2C$
B. $B2B$
C. $C2C$
D. All of the above

ugcnetcse-june2009-paper2

Answer key

## 4.0.51 UGC NET CSE | June 2009 | Part 2 | Question: 45 top

When compared with analog cellular systems, an advantage of digital $TDMA$ cellular system is that :

A. it is less complicated
B. it requires less of computer memory
C. it conserves spectrum bandwidth
D. it costs less

ugcnetcse-june2009-paper2

## 4.0.52 UGC NET CSE | June 2009 | Part 2 | Question: 41 top

Which one of the following ISO standard is used for software process ?

A. $ISO9000$
B. $ISO9001$
C. $ISO9003$
D. $ISO9000-3$

ugcnetcse-june2009-paper2

Answer key

## 4.0.53 UGC NET CSE | June 2009 | Part 2 | Question: 07 top

The Fiber Distributed Data Interface uses :

A. single mode fibers and $\mathrm{LEDs}$
B. multimode fibers and $\mathrm{LEDs}$
C. single mode fibers and $\mathrm{ILDs}$
D. multimode fibers and $\mathrm{ILDs}$

ugcnetcse-june2009-paper2

Answer key

## 4.0.54 UGC NET CSE | June 2009 | Part 2 | Question: 31 top

Usually information security in a network is achieved by :

A. Layering
B. Cryptography
C. Grade of service
D. None of the above

ugcnetcse-june2009-paper2

## 4.0.55 UGC NET CSE | June 2009 | Part 2 | Question: 30 top

GSM/CDMA systems :

A. are limited to very low speed data
B. require no local loop wires
C. are predominantly used for voice
D. all of the above

ugcnetcse-june2009-paper2

Answer key

## 4.0.56 UGC NET CSE | December 2009 | Part 2 | Question: 30 top

Match the following :

| | | | |
|---|---|---|---|
| (i) | Ethernet | (a) | Determinsitic |
| (ii) | Token Ring N | (b) | Utilize the full wire speed |
| (iii) | Cut-through switch | (c) | Prevent looping |
| (iv) | Spanning tree | (d) | Checking Valid address Codes |

A. a-ii, b-iii, c-iv, d-i
B. a-i, b-iii, c-iv, d-ii
C. a-ii, b-iv, c-iii, d-i
D. a-iv, b-iii, c-ii, d-i

ugcnetcse-dec2009-paper2 computer-networks

Answer key

## 4.0.57 UGC NET CSE | December 2018 | Part 2 | Question: 86 top

A host is connected to a department network which is part of a university network. The university network, in turn, is part of the Internet. The largest network, in which the Ethernet address of the host is unique, is

A. the Internet
B. the university network
C. the department network
D. the subnet to which the host belongs

ugcnetcse-dec2018-paper2 computer-networks

Answer key

## 4.0.58 UGC NET CSE | December 2015 | Part 3 | Question: 15 top

A network device is sending out the data at the rate of $2000$ bps. How long does it take to send a file of $1,00,000$ characters?

A. $50$
B. $200$
C. $400$
D. $800$

ugcnetcse-dec2015-paper3 computer-networks

Answer key

### 4.0.59 UGC NET CSE | December 2015 | Part 3 | Question: 68 top

Which of the following steps is/are not required for analog to digital conversion?

a. Sensing b. Conversion c. Amplification d. Conditioning e. Quantization

A. a and b only B. c and d only C. d and e only D. b and e only

ugcnetcse-dec2015-paper3 computer-networks

Answer key

### 4.0.60 UGC NET CSE | June 2008 | Part 2 | Question: 28 top

**For a channel of 3 KHz bandwidth and signal to noise ratio of 30 dB, the maximum data rate is:**

**(A) 3000 bps** **(B) 6000 bps**

**(C) 15000 bps** **(D) 30000 bps**

ugcnetcse-june2008-paper2

Answer key

## 4.1 Analog & Digital Transmission (1) top

### 4.1.1 Analog & Digital Transmission: UGC NET CSE | Junet 2015 | Part 3 | Question: 15 top

The process of dividing an analog signal into a string of discrete outputs, each of constant amplitude, is called:

A. Strobing B. Amplification C. Conditioning D. Quantization

ugcnetcse-june2015-paper3 analog-&-digital-transmission computer-networks

Answer key

## 4.2 Analog Signals (1) top

### 4.2.1 Analog Signals: UGC NET CSE | December 2014 | Part 2 | Question: 26 top

The period of a signal is $10$ ms. What is its frequency in Hertz ?

A. $10$ B. $100$ C. $1000$ D. $10000$

ugcnetcse-dec2014-paper2 computer-networks analog-signals

Answer key

## 4.3 Application Layer (1) top

### 4.3.1 Application Layer: UGC NET CSE | January 2017 | Part 2 | Question: 27 top

The maximum size of the data that the application layer can pass on to the $TCP$ layer below is _____.

A. $2^{16}$ bytes
B. $2^{16}$ bytes + $TCP$ header length
C. $2^{16}$ bytes – $TCP$ header length
D. $2^{15}$ bytes

ugcnetjan2017ii computer-networks application-layer

Answer key

## 4.4 Asymmetric Key Cryptography (1) top

### 4.4.1 Asymmetric Key Cryptography: UGC NET CSE | December 2014 | Part 3 | Question: 30 top

Which one of the following is true for asymmetric-key cryptography ?

A. Private key is kept by the receiver and public key is announced to the public.
B. Public key is kept by the receiver and private key is announced to the public.
C. Both private key and public key are kept by the receiver.
D. Both private key and public key are announced to the public.

ugcnetcse-dec2014-paper3 computer-networks asymmetric-key-cryptography

Answer key

## 4.5 Binary Search Tree (1) top

### 4.5.1 Binary Search Tree: UGC NET CSE | December 2010 | Part 2 | Question: 25 top

Which of the following can be the sequence of nodes examined in binary search tree while searching for key $88$?

A. $90, 40, 65, 50, 88$
B. $90, 110, 80, 85, 88$
C. $190, 60, 90, 85, 88$
D. $65, 140, 80, 70, 88$

ugcnetcse-dec2010-paper2 computer-networks binary-search-tree

Answer key

## 4.6 Binary Symmetric Channel (1) top

### 4.6.1 Binary Symmetric Channel: UGC NET CSE | June 2013 | Part 3 | Question: 53 top

Binary symmetric channel uses

A. Half duplex protocol
B. Full duplex protocol
C. Bit oriented protocol
D. None of the above

ugcnetcse-june2013-paper3 computer-networks binary-symmetric-channel

Answer key

## 4.7 Bit Oriented Protocol (1) top

### 4.7.1 Bit Oriented Protocol: UGC NET CSE | December 2014 | Part 3 | Question: 29 top

_____ is a bit-oriented protocol for communication over point-to-point and multipoint links.

A. Stop-and-wait
B. HDLC
C. Sliding window
D. Go-back-N

ugcnetcse-dec2014-paper3 computer-networks bit-oriented-protocol

Answer key

## 4.8 Bit Rate (1) top

### 4.8.1 Bit Rate: UGC NET CSE | December 2014 | Part 2 | Question: 29 top

An analog signal has a bit rate of $6000$ bps and a baud rate of $2000$ baud. How many data elements are carried by each signal element

A. $0.336$ bits/baud
B. $3$ bits/baud
C. $120,00,000$ bits/baud
D. None of the above

ugcnetcse-dec2014-paper2 computer-networks bit-rate

Answer key

## 4.9 Bridges (1) top

### 4.9.1 Bridges: UGC NET CSE | December 2008 | Part 2 | Question: 36 top

A conventional $LAN$ bridge specifies only the functions of $OSI$ :

A. layers 1 and 2
B. layers 1 through 3
C. all layers
D. none of the above

ugcnetcse-dec2008-paper2 computer-networks osi-model bridges

Answer key

## 4.10 Cache Memory (1) top

### 4.10.1 Cache Memory: UGC NET CSE | December 2008 | Part 2 | Question: 9 top

Suppose it takes $100\ ns$ to access page table and $20\ ns$ to access associative memory. If the average access time is $28\ ns$, the corresponding hit rate is:

A. $100$ percent
B. $90$ percent
C. $80$ percent
D. $70$ percent

ugcnetcse-dec2008-paper2 computer-networks cache-memory

Answer key

## 4.11 Checksum (1) top

### 4.11.1 Checksum: UGC NET CSE | August 2016 | Part 3 | Question: 27 top

In CRC checksum method, assume that given frame for transmission is 1101011011 and the generator polynomial is $G(x) = x^4 + x + 1$. After implementing $CRC$ encoder, the encoded word sent from sender side is _____.

A. 11010110111110
B. 11101101011011
C. 110101111100111
D. 110101111001111

ugcnetcse-aug2016-paper3 computer-networks crc-polynomial checksum

Answer key

## 4.12 Classful Addressing (2) top

### 4.12.1 Classful Addressing: UGC NET CSE | December 2012 | Part 3 | Question: 15 top

In classful addressing, an IP address 123.23.56.4 belongs to _____ format.

A. A
B. B
C. C
D. D

ugcnetcse-dec2012-paper3 computer-networks ip-addressing classful-addressing

Answer key

### 4.12.2 Classful Addressing: UGC NET CSE | December 2014 | Part 2 | Question: 27 top

In a classful addressing, first four bits in Class $A$ IP address is

A. $1010$
B. $1100$
C. $1011$
D. $1110$

ugcnetcse-dec2014-paper2 computer-networks classful-addressing

Answer key

## 4.13 Classless Addressing (1) top

### 4.13.1 Classless Addressing: UGC NET CSE | Junet 2015 | Part 2 | Question: 30 top

Which of the following is/are restriction(s) in classless addressing?

A. The number of addresses needs to be a power of $2$
B. The mask needs to be included in the address to define the block
C. The starting address must be divisible by the number of addresses in the block
D. All of the above

ugcnetcse-june2015-paper2 computer-networks classless-addressing

Answer key

## 4.14 Communication (9) top

### 4.14.1 Communication: UGC NET CSE | December 2013 | Part 3 | Question: 43 top

What is the bit rate for transmitting uncompressed $800 \times 600$ pixel colour frames with 8 bits/pixel at 40 frames/second?

A. 2.4 Mbps
B. 15.36 Mbps
C. 153.6 Mbps
D. 1536 Mbps

ugcnetcse-dec2013-paper3 computer-networks communication

Answer key

### 4.14.2 Communication: UGC NET CSE | December 2013 | Part 3 | Question: 46 top

A client-server system uses a satellite network, with the satellite at a height of 40,000 kms. What is the best-case delay in response to a request? (Note that the speed of light in air is 3,00,000 km/second)

A. 133.33 m sec
B. 266.67 m sec
C. 400.00 m sec
D. 533.33 m sec

ugcnetcse-dec2013-paper3 communication computer-networks

Answer key

### 4.14.3 Communication: UGC NET CSE | December 2013 | Part 3 | Question: 48 top

____ is a type of transmission impairment in which the signal looses strength due to the resistance of the transmission medium

A. Attenuation
B. Distortion
C. Noise
D. Decibel

ugcnetcse-dec2013-paper3 computer-networks communication non-gate

Answer key

### 4.14.4 Communication: UGC NET CSE | June 2012 | Part 2 | Question: 19 top

The station to hub distance in which it is 2000 meters

A. 100 Base-$T_X$
B. 100 Base-$F_X$
C. 100 Base-$T_4$
D. 100 Base-$T_1$

ugcnetcse-june2012-paper2 computer-networks communication

Answer key

### 4.14.5 Communication: UGC NET CSE | June 2012 | Part 2 | Question: 39 top

For the transmission of the signal. Bluetooth wireless technology uses

A. time division multiplexing
B. frequency division multiplexing
C. time division duplex
D. frequency division duplex

computer-networks communication ugcnetcse-june2012-paper2

Answer key

### 4.14.6 Communication: UGC NET CSE | June 2012 | Part 2 | Question: 45 top

_____ is a satellite based tracking system that enables the determination of person's position

A. Bluetooth
B. WAP
C. Short Message Service
D. Global Positioning System

computer-networks communication ugcnetcse-june2012-paper2

Answer key

### 4.14.7 Communication: UGC NET CSE | June 2012 | Part 3 | Question: 64 top

Match the following with link quality measurement and handoff initiation :

| | | | |
|---|---|---|---|
| (a) | Networked-Controlled Handoff (NCHO) | (i) | MS connect to BS |
| (b) | Mobile-Assisted Handoff (MAHO) | (ii) | Process via channel the target BS |
| (c) | Forward Handoff | (iii) | First generation Analog Cellular System |
| (d) | Hard Handoff | (iv) | Second generation digital cellular system |

A. (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)
B. (a)-(ii), (b)-(iii), (c)-(i), (d)-(iv)
C. (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)
D. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)

computer-networks communication ugcnetcse-june2012-paper3

Answer key

### 4.14.8 Communication: UGC NET CSE | June 2014 | Part 2 | Question: 01 top

Infrared signals can be used for short range communication in a closed area using _____ propagation.

A. Ground
B. Sky
C. Line of sight
D. Space

ugcnetcse-june2014-paper2 communication non-gate

Answer key

### 4.14.9 Communication: UGC NET CSE | June 2014 | Part 3 | Question: 06 top

In a digital transmission, the receiver clock is $0.1$ percent faster than the sender clock. How many extra bits per second does the receiver receive if the data rate is $1$ Mbps ?

A. $10$ bps
B. $100$ bps
C. $1000$ bps
D. $10000$ bps

ugcnetjune2014iii computer-networks communication

Answer key

## 4.15 Computer Neworks (1) top

### 4.15.1 Computer Neworks: UGC NET CSE | October 2020 | Part 2 | Question: 60 top

Firewall is a device that filters access to the protected network from the outside network. Firewalls can filter the packets on the basis of

a. Source IP address
b. Destination IP address
c. TCP Source Port
d. UDP Source Port
e. TCP Destination Port

Choose the correct answer from the options given below:

A. $(a), (b)$ and $(c)$ only
B. $(b)$ and $(e)$ only
C. $(c)$ and $(d)$ only
D. $(a), (b), (c), (d)$ and $(e)$ only

ugcnetcse-oct2020-paper2 computer-neworks network-security

Answer key

## 4.16 Crc Polynomial (2) top

### 4.16.1 Crc Polynomial: UGC NET CSE | December 2013 | Part 3 | Question: 33 top

The message 11001001 is to be transmitted using the CRC polynomial $x^3 + 1$ to protect it from errors. The message that should be transmitted is

A. 110010011001
B. 11001001
C. 110010011001001
D. 11001001011

ugcnetcse-dec2013-paper3 computer-networks crc-polynomial

Answer key

### 4.16.2 Crc Polynomial: UGC NET CSE | January 2017 | Part 3 | Question: 27 top

Let $G(x)$ be generator polynomial used for CRC checking. The condition that should be satisfied by $G(x)$ to correct odd numbered error bits, will be:

A. $(1+x)$ is factor of $G(x)$
B. $(1-x)$ is factor of $G(x)$
C. $(1+x^2)$ is factor of $G(x)$
D. $x$ is factor of $G(x)$

ugcnetcse-jan2017-paper3 computer-networks crc-polynomial

Answer key

## 4.17 Cryptography (7) top

### 4.17.1 Cryptography: UGC NET CSE | August 2016 | Part 3 | Question: 30 top

The plain text message $BAHI$ encrypted with $RSA$ algorithm using $e=3, d=7$ and $n=33$ and the characters of the message are encoded using the values $00$ to $25$ for letters A to Z. Suppose character by character encryption was implemented. Then, the Cipher Text message is _____.

A. ABHI
B. HAQC
C. IHBA
D. BHQC

ugcnetcse-aug2016-paper3 cryptography computer-networks

Answer key

### 4.17.2 Cryptography: UGC NET CSE | December 2013 | Part 3 | Question: 32 top

Find the false statement:

A. In Modern Cryptography, symmetric key algorithms use same key both for Encryption and Decryption.
B. The symmetric cipher DES (Data Encryption Standard) was widely used in the industry for security product.
C. The AES (Advanced Encryption Standard) cryptosystem allows variable key lengths of size 56 bits and 124 bits.
D. Public key algorithms use two different keys for Encryption and Decryption

ugcnetcse-dec2013-paper3 computer-networks cryptography

Answer key

### 4.17.3 Cryptography: UGC NET CSE | December 2014 | Part 2 | Question: 30 top

How many distinct stages are there in $DES$ algorithm, which is parameterized by a $56$-bit key ?

A. $16$
B. $17$
C. $18$
D. $19$

ugcnetcse-dec2014-paper2 computer-networks cryptography

Answer key

### 4.17.4 Cryptography: UGC NET CSE | July 2018 | Part 2 | Question: 45 top

Match the following symmetric block ciphers with corresponding block and key sizes:

| | List-I | | List-II |
|---|---|---|---|
| (a) | DES | (i) | block size 64 and key size ranges between 32 and 448 |
| (b) | IDEA | (ii) | block size 64 and key size 64 |
| (c) | BLOW FISH | (iii) | block size 128 and key sizes 128, 192, 256 |
| (d) | AES | (iv) | block size 64 and key size 128 |

A. a-iv; b-ii; c-i; d-iii
B. a-ii; b-iv; c-i; d-iii
C. a-ii; b-iv; c-iii; d-i
D. a-iv; b-ii; c-iii; d-i

ugcnetcse-july2018-paper2 cryptography computer-networks

Answer key

### 4.17.5 Cryptography: UGC NET CSE | June 2014 | Part 3 | Question: 56 top

Match the following cryptographic algorithms with their design issues :

| | List-I | | List-II |
|---|---|---|---|
| a. | DES | i. | Message Digest |
| b. | AES | ii. | Public key |
| c. | RSA | iii. | 56-bit key |
| d. | SHA-1 | iv. | 128-bit key |

A. a-ii, b-i, c-iv, d-iii
B. a-iii, b-i, c-iv, d-ii
C. a-iii, b-iv, c-ii, d-i
D. a-iv, b-i, c-ii, d-iii

ugcnetjune2014iii computer-networks network-security cryptography

Answer key

### 4.17.6 Cryptography: UGC NET CSE | October 2020 | Part 2 | Question: 32 top

Using 'RSA' public key cryptosystem, if $p = 3$, $q = 11$ and $d = 7$, find the value of $e$ and encrypt the number $'19'$

A. $20, 19$
B. $33, 11$
C. $3, 28$
D. $77, 28$

ugcnetcse-oct2020-paper2 computer-networks network-security cryptography

Answer key

### 4.17.7 Cryptography: UGC NET CSE | October 2020 | Part 2 | Question: 54 top

Which among the following statement(s) is(are) true?

a. A hash function takes a message of arbitrary length and produces a fixed length output
b. A hash function takes a message of fixed length and produces a fixed length output
c. A hash function takes a message of arbitrary length and produces a fixed length output
d. A hash function takes a message of fixed length and produces a variable length output

Choose the correct answer from the options given below:

A. $(a)$ only
B. $(b)$ and $(c)$ only
C. $(a)$ and $(c)$ only
D. $(b)$ only

ugcnetcse-oct2020-paper2 computer-networks network-security cryptography

Answer key

## 4.18 Data Communication (7) top

### 4.18.1 Data Communication: UGC NET CSE | December 2009 | Part 2 | Question: 26 top

Device on one network can communicate with devices on another network via a

(A) Hub/Switch

(B) Utility server

(C) File server

(D) Gateway

ugcnetcse-dec2009-paper2 computer-networks data-communication

Answer key

### 4.18.2 Data Communication: UGC NET CSE | December 2011 | Part 2 | Question: 35 top

The cellular frequency reuse factor for the cluster size $N$ is

A. $N$
B. $N^2$
C. $\frac{1}{N}$
D. $\frac{1}{N^2}$

ugcnetcse-dec2011-paper2 computer-networks data-communication

Answer key

### 4.18.3 Data Communication: UGC NET CSE | December 2011 | Part 2 | Question: 37 top

Handoff is the mechanism that

A. Transfer an ongoing call from one base station to another
B. Initiating a new call
C. Dropping an ongoing call
D. None of above

ugcnetcse-dec2011-paper2 computer-networks data-communication

Answer key

### 4.18.4 Data Communication: UGC NET CSE | December 2011 | Part 2 | Question: 48 top

A telephone conference call is an example of which type of communications ?

A. Same time / same place
B. Same time / different place
C. Different time / different place
D. Different time / same place

ugcnetcse-dec2011-paper2 computer-networks data-communication

Answer key

### 4.18.5 Data Communication: UGC NET CSE | June 2010 | Part 2 | Question: 47 top

A leased special high-speed connection from the local telephone carrier for business users that transmits at $1.544$ mbps is known as _____ carrier.

A. $T_1$
B. $T_2$
C. $T_3$
D. $T_4$

ugcnetcse-june2010-paper2 computer-networks data-communication

Answer key

### 4.18.6 Data Communication: UGC NET CSE | June 2010 | Part 2 | Question: 48 top

$CDMA$ Cell uses _____ carriers of $1.25$ MHz.

A. $9$
B. $18$
C. $22$
D. $64$

ugcnetcse-june2010-paper2 computer-networks data-communication

### 4.18.7 Data Communication: UGC NET CSE | Junet 2015 | Part 3 | Question: 29 top

Suppose a digitazed voice channel is made by digitizing 8 kHz bandwidth analog voice signal. It is required to sample the signal at twice the highest frequency (two samples per hertz). What is the bit rate required, if it is assumed that each sample required 8 bits?

A. 32 kbps
B. 64 kbps
C. 128 kbps
D. 256 kbps

ugcnetcse-june2015-paper3 computer-networks data-communication

Answer key

## 4.19 Data Link Layer (7) top

### 4.19.1 Data Link Layer: UGC NET CSE | December 2008 | Part 2 | Question: 16 top

The throughput of slotted $ALOHA$ is given by:

A. $S = G$
B. $S = GeG$
C. $S = Ge - G$
D. $S = eG$

ugcnetcse-dec2008-paper2 computer-networks data-link-layer

Answer key

### 4.19.2 Data Link Layer: UGC NET CSE | December 2009 | Part 2 | Question: 28 top

Which of the following are Data Link Layer standard ?
1. Ethernet

2. HSSI

3. Frame Relay

4. 10 – Base T

5. Token Ring

(A) 1, 2, 3

(B) 1, 3, 5

(C) 1, 3, 4, 5

(D) 1, 2, 3, 4, 5

ugcnetcse-dec2009-paper2 computer-networks data-link-layer

Answer key

### 4.19.3 Data Link Layer: UGC NET CSE | June 2016 | Part 3 | Question: 29 top

Assume that we need to download text documents at the rate of 100 pages per minute. A page is in average of 24 lines with 80 characters in each line requires 8 bits. Then the required bit rate of the channel is

A. 1.636 Kbps B. 1.636 Mbps C. 3.272 Mbps D. 3.272 Kbps

ugcnetcse-june2016-paper3 computer-networks data-link-layer

Answer key

### 4.19.4 Data Link Layer: UGC NET CSE | November 2017 | Part 3 | Question: 25 top

Suppose we want to download text documents at the rate of $100$ pages per second. Assume that a page consists of an average of $24$ lines with $80$ characters in each line. What is the required bit rate of the channel?

A. $192$ kbps B. $512$ kbps C. $1.248$ Mbps D. $1.536$ Mbps

ugcnetcse-nov2017-paper3 computer-networks data-link-layer

Answer key

### 4.19.5 Data Link Layer: UGC NET CSE | November 2017 | Part 3 | Question: 27 top

If a file consisting of $50,000$ characters takes $40$ seconds to send, then the data rate is _____

A. $1$ kbps B. $1.25$ kbps C. $2$ kbps D. $10$ kbps

ugcnetcse-nov2017-paper3 computer-networks data-link-layer

Answer key

### 4.19.6 Data Link Layer: UGC NET CSE | September 2013 | Part 2 | Question: 2 top

In _____ CSMA protocol, after the station finds the line idle, it sends or refrains from sending based on the outcome of a random number generated.

A. Non-persistent B. 0- persistent C. 1- persistent D. p- persistent

ugcnetsep2013ii computer-networks data-link-layer

Answer key

### 4.19.7 Data Link Layer: UGC NET CSE | September 2013 | Part 3 | Question: 7 top

Suppose a file of 10,000 characters is to be sent over a line at 2400 bps. Assume that the data is sent in frames. Each frame consists of 1000 characters and an overhead of 48 bits per frame. Using synchronous transmission, the total overhead time is

A. 0.05 second B. 0.1 second C. 0.2 second D. 2.0 seconds

ugcnetcse-sep2013-paper3 computer-networks data-link-layer

Answer key

## 4.20 Data Mining Algorithm (1) top

### 4.20.1 Data Mining Algorithm: UGC NET CSE | December 2008 | Part 2 | Question: 49 top

An example of a data mining algorithm which uses squared error score function is :

A. CART algorithm
B. back propagation algorithm
C. a priori algorithm
D. vector space algorithm

ugcnetcse-dec2008-paper2 neural-network data-mining-algorithm

## 4.21 Data Transmission (1) top

### 4.21.1 Data Transmission: UGC NET CSE | December 2014 | Part 3 | Question: 26 top

How many characters per second ($7$ bits + $1$ parity) can be transmitted over a $3200$ bps line if the transfer is asynchronous ? (Assuming $1$ start bit and $1$ stop bit)

A. $300$ B. $320$ C. $360$ D. $400$

ugcnetcse-dec2014-paper3 computer-networks data-transmission asynchronous-transmission

Answer key

## 4.22 Distance Vector Routing (1) top

### 4.22.1 Distance Vector Routing: UGC NET CSE | January 2017 | Part 2 | Question: 29 top

Distance vector routing algorithm is a dynamic routing algorithm. The routing tables in distance vector routing algorithm are updated _____.

A. automatically
B. by server
C. by exchanging information with neighbour nodes
D. with back up database

ugcnetjan2017ii computer-networks distance-vector-routing

Answer key

## 4.23 Edi Layer (1) top

### 4.23.1 Edi Layer: UGC NET CSE | December 2008 | Part 2 | Question: 48 top

E-commerce involves :

A. Electronic Data Interchange
B. Electronic mail
C. Electronic Bulletin Boards
D. All of the above

ugcnetcse-dec2008-paper2 e-commerce e-technologies edi-layer

## 4.24 Electronic Payment Systems (1) top

### 4.24.1 Electronic Payment Systems: UGC NET CSE | December 2015 | Part 2 | Question: 50 top

____ uses electronic means to transfer funds directly from one account to another rather than by cheque or cash

A. M-Banking B. E-Banking C. O-Banking D. C-Banking

ugcnetcse-dec2015-paper2 e-technologies electronic-payment-systems mobile-computing computer-networks non-gate

Answer key

## 4.25 Encoding (2) top

### 4.25.1 Encoding: UGC NET CSE | December 2012 | Part 3 | Question: 68 top

An example of a dictionary-based coding technique is

A. Run-length coding
B. Huffman coding
C. Predictive coding
D. LZW coding

ugcnetcse-dec2012-paper3 computer-networks network-security encoding

Answer key

### 4.25.2 Encoding: UGC NET CSE | June 2013 | Part 3 | Question: 55 top

Given code word $1110001010$ is to be transmitted with even parity check bit. The encoded word to be transmitted for this code is

A. $11100010101$
B. $11100010100$
C. $1110001010$
D. $111000101$

computer-networks ugcnetcse-june2013-paper3 encoding

Answer key

## 4.26 Encryption Decryption (2) top

### 4.26.1 Encryption Decryption: UGC NET CSE | July 2018 | Part 2 | Question: 50 top

Encrypt the Message "HELLO MY DEARZ" using Transposition Cipher with

$$Key \begin{cases} \text{Plain Text} & 2413 \\ \text{Cipher Text} & 1234 \end{cases}$$

A. HLLEO YM AEDRZ
B. EHOLL ZYM RAED
C. ELHL MDOY AZER
D. ELHL DOMY ZAER

ugcnetcse-july2018-paper2 cryptography encryption-decryption computer-networks

Answer key

### 4.26.2 Encryption Decryption: UGC NET CSE | June 2019 | Part 2 | Question: 86 top

In the TCP/IP model, encryption and decryption are functions of ____ layer.

A. data link
B. network
C. transport
D. application

ugcnetcse-june2019-paper2 encryption-decryption

Answer key

## 4.27 Entropy (1) top

### 4.27.1 Entropy: UGC NET CSE | December 2011 | Part 2 | Question: 9 top

The amount of uncertainty in a system of symbol is called

A. Bandwidth
B. Entropy
C. Loss
D. Quantum

ugcnetcse-dec2011-paper2 computer-networks entropy

Answer key

## 4.28 Error Correction (5) top

### 4.28.1 Error Correction: UGC NET CSE | December 2009 | Part 2 | Question: 03 top

If in an error detection and correction code a message M : “You are good students” is stored as M' : Youare areyou aregood goodare goodstudents studentsgood. What is the space required to store M' in general ? (assume that ‘n’ is the length of M)

A. 2n B. 3n C. 4n D. less than 4n

ugcnetcse-dec2009-paper2 computer-networks error-correction

Answer key

### 4.28.2 Error Correction: UGC NET CSE | December 2011 | Part 2 | Question: 12 top

Start and stop bits are used in serial communications for

A. Error detection
B. Error correction
C. Synchronization
D. Slowing down the communication

ugcnetcse-dec2011-paper2 computer-networks error-correction

Answer key

### 4.28.3 Error Correction: UGC NET CSE | July 2018 | Part 2 | Question: 49 top

To guarantee correction of upto $t$ errors, the minimum Hamming distance $d_{min}$ in a block code must be _____

A. $t+1$ B. $t-2$ C. $2t-1$ D. $2t+1$

ugcnetcse-july2018-paper2 computer-networks error-correction error-detection

Answer key

### 4.28.4 Error Correction: UGC NET CSE | June 2009 | Part 2 | Question: 02 top

In order that a code is error correcting, the minimum Hamming distance should be :

1. $t$
2. $2t-1$
3. $2t$
4. $2t+1$

ugcnetcse-june2009-paper2 error-correction

Answer key

### 4.28.5 Error Correction: UGC NET CSE | September 2013 | Part 3 | Question: 56 top

If the data unit is 111111 and the divisor is 1010. In CRC method, what is the dividend at the transmission before division?

A. 1111110000 B. 1111111010 C. 111111000 D. 111111

ugcnetcse-sep2013-paper3 computer-networks error-correction crc-polynomial

Answer key

## 4.29 Error Detection Correction (1) top

### 4.29.1 Error Detection Correction: UGC NET CSE | June 2014 | Part 3 | Question: 57 top

Consider a code with five valid code words of length ten :

$0000000000, 0000011111, 1111100000, 1110000011, 1111111111$

Hamming distance of the code is

A. $5$ B. $10$ C. $8$ D. $9$

ugcnetjune2014iii computer-networks error-detection-correction hamming-distance

Answer key

## 4.30 Ethernet (5) top

### 4.30.1 Ethernet: UGC NET CSE | June 2013 | Part 3 | Question: 17 top

The baud rate of a signal is 600 baud/second. If each signal unit carries 6 bits, then the bit rate of a signal is _____

A. 3600 B. 100 C. 6/600 D. None of the above

ugcnetcse-june2013-paper3 computer-networks ethernet

Answer key

### 4.30.2 Ethernet: UGC NET CSE | June 2013 | Part 3 | Question: 22 top

What is the baud rate of standard 10 Mbps Ethernet?

A. 10 megabaud B. 20 megabaud C. 30 megabaud D. 40 megabaud

ugcnetcse-june2013-paper3 computer-networks ethernet

Answer key

### 4.30.3 Ethernet: UGC NET CSE | June 2014 | Part 2 | Question: 03 top

The minimum frame length for $10$ Mbps Ethernet is _____ bytes and maximum is _____ bytes.

A. $64$ & $128$
B. $128$ & $1518$
C. $1518$ & $3036$
D. $64$ & $1518$

ugcnetcse-june2014-paper2 computer-networks ethernet

Answer key

### 4.30.4 Ethernet: UGC NET CSE | September 2013 | Part 2 | Question: 1 top

A file is downloaded in a home computer using 56 kbps MODEM connected to an Internet Service Provider. If the download of the file completes in 2 minutes, what is the maximum size of the data downloaded?

A. 112 Mbits B. 6.72 Mbits C. 67.20 Mbits D. 672 Mbits

ugcnetsep2013ii computer-networks ethernet

Answer key

### 4.30.5 Ethernet: UGC NET CSE | September 2013 | Part 2 | Question: 4 top

What is the maximum length of CAT-5 UTP cable in Fast Ethernet network?

A. 100 meters B. 200 meters C. 1000 meters D. 2000 meters

ugcnetsep2013ii computer-networks ethernet

Answer key

## 4.31 Firewall (1) top

### 4.31.1 Firewall: UGC NET CSE | September 2013 | Part 3 | Question: 58 top

A _____ can forward or block packets based on the information in the network layer and transport layer header

A. Proxy firewall
B. Firewall
C. Packet filter firewall
D. Message digest firewall

ugcnetcse-sep2013-paper3 computer-networks firewall

Answer key

## 4.32 Hamming Code (4) top

### 4.32.1 Hamming Code: UGC NET CSE | December 2010 | Part 2 | Question: 10 top

Encoding of data bits $0011$ into $7$-bit even Parity Hamming Code is

A. $0011110$ B. $0101110$ C. $0010110$ D. $0011100$

ugcnetcse-dec2010-paper2 computer-networks hamming-code

Answer key

### 4.32.2 Hamming Code: UGC NET CSE | January 2017 | Part 3 | Question: 64 top

Let C be a binary linear code with minimum distance $2t+1$ then it can correct upto ___ bits of error

A. $t+1$ B. $t$ C. $t-2$ D. $t/2$

ugcnetcse-jan2017-paper3 computer-networks hamming-code

Answer key

### 4.32.3 Hamming Code: UGC NET CSE | Junet 2015 | Part 3 | Question: 66 top

In a binary Hamming Code the number of check digits is r then number of message digits is equal to

A. $2^r-1$ B. $2^r-r-1$ C. $2^r-r+1$ D. $2^r+r-1$

ugcnetcse-june2015-paper3 computer-networks hamming-code

Answer key

### 4.32.4 Hamming Code: UGC NET CSE | October 2020 | Part 2 | Question: 31 top

Consider a code with only four valid code words: $0000000000$, $0000011111$, $1111100000$, and $1111111111$. This code has distance $5$. If the code word arrived is $0000000111$ then the original code word must be _____

A. $0000011111$ B. $0000000000$ C. $1111100000$ D. $1111111111$

ugcnetcse-oct2020-paper2 computer-networks hamming-code

Answer key

## 4.33 Hamming Distance (1) top

### 4.33.1 Hamming Distance: UGC NET CSE | June 2013 | Part 3 | Question: 54 top

Hamming distance between 100101000110 and 110111101101 is

A. 3 B. 4 C. 5 D. 6

ugcnetcse-june2013-paper3 computer-networks hamming-distance

Answer key

## 4.34 Huffman Code (1) top

### 4.34.1 Huffman Code: UGC NET CSE | June 2013 | Part 3 | Question: 14 top

A data file of $1,00,000$ characters contains only the characters g-$1$, with the frequencies as indicated in table:

| | g | h | i | j | k | l |
|---|---|---|---|---|---|---|
| **Frequency in thousand** | 45 | 13 | 12 | 16 | 9 | 5 |

using the variable-length code by Huffman codes, the file can be encoded with

A. $2,52,000$ bits
B. $2,64,000$ bits
C. $2,46,000$ bits
D. $2,24,000$ bits

ugcnetcse-june2013-paper3 computer-networks huffman-code data-link-layer

Answer key

## 4.35 Internal Memory (1) top

### 4.35.1 Internal Memory: UGC NET CSE | Junet 2015 | Part 3 | Question: 1 top

For the 8 bit word 00111001,the check bits stored with it would we 0111. Suppose when the word is read from memory, the check bits are calculated to be 1101. What is the data word that was read from memory?

A. 10011001 B. 00011001 C. 00111000 D. 11000110

ugcnetcse-june2015-paper3 computer-architecture internal-memory

Answer key

## 4.36 Internet Security (1) top

### 4.36.1 Internet Security: UGC NET CSE | July 2018 | Part 2 | Question: 47 top

In Challenge-Response authentication the claimant ____

A. Proves that she knows the secret without revealing it
B. Proves that she does not know the secret
C. Reveals the secret
D. Gives a challenge

ugcnetcse-july2018-paper2 computer-networks internet-security

Answer key

## 4.37 Internet Stack Layers (1) top

### 4.37.1 Internet Stack Layers: UGC NET CSE | June 2019 | Part 2 | Question: 87 top

Which of the following statements is/are true with regard to various layers in the Internet stack?

P: At the link layer, a packet of transmitted information is called a frame.

Q: At the network layer, a packet of transmitted information is called a segment.

A. P only B. Q only C. P and Q D. Neither P nor Q

ugcnetcse-june2019-paper2 internet-stack-layers

Answer key

## 4.38 Ip Addressing (10) top

### 4.38.1 Ip Addressing: UGC NET CSE | December 2008 | Part 2 | Question: 20 top

IP address in B class is given by:

A. 125.123.123.2
B. 191.023.21.54
C. 192.128.32.56
D. 10.14.12.34

ugcnetcse-dec2008-paper2 computer-networks ip-addressing

Answer key

### 4.38.2 Ip Addressing: UGC NET CSE | December 2013 | Part 3 | Question: 44 top

In IPV 4, the IP address 200.200.200.200 belongs to

A. Class A B. Class B C. Class C D. Class D

ugcnetcse-dec2013-paper3 computer-networks ip-addressing

Answer key

### 4.38.3 Ip Addressing: UGC NET CSE | July 2018 | Part 2 | Question: 43 top

The dotted-decimal notation of the following IPV4 address in binary notation is ____

10000001 00001011 00001011 11101111

A. 111.56.45.239
B. 129.11.10.238
C. 129.11.11.239
D. 111.56.11.239

ugcnetcse-july2018-paper2 computer-networks ip-addressing

Answer key

## 4.38.4 Ip Addressing: UGC NET CSE | June 2012 | Part 3 | Question: 29 top

Which of the following IP address class is a multicast address?

A. Class A B. Class B C. Class C D. Class D

ugcnetcse-june2012-paper3 computer-networks ip-addressing

Answer key

## 4.38.5 Ip Addressing: UGC NET CSE | June 2014 | Part 3 | Question: 71 top

A network on the Internet has a subnet mask of $255.255.240.0$. What is the maximum number of hosts it can handle ?

A. $1024$ B. $2048$ C. $4096$ D. $8192$

ugcnetjune2014iii computer-networks ip-addressing

Answer key

## 4.38.6 Ip Addressing: UGC NET CSE | June 2019 | Part 2 | Question: 88 top

What percentage $(\%)$ of the IPv4, IP address space do all class C addresses consume?

A. $12.5\%$ B. $25\%$ C. $37.5\%$ D. $50\%$

ugcnetcse-june2019-paper2 ip-addressing

Answer key

## 4.38.7 Ip Addressing: UGC NET CSE | Junet 2015 | Part 2 | Question: 29 top

What is the size of the 'total length' field in $IPv4$ diagram?

A. $4$ bits B. $8$ bits C. $16$ bits D. $32$ bits

ugcnetcse-june2015-paper2 computer-networks ip-addressing

Answer key

## 4.38.8 Ip Addressing: UGC NET CSE | November 2017 | Part 3 | Question: 29 top

The address of a class $B$ host is to be split into subnets with a $6$– bit subnet number. What is the maximum number of subnets and maximum number of hosts in each subnet?

A. $62$ subnets and $1022$ hosts
B. $64$ subnets and $1024$ hosts
C. $62$ subnets and $254$ hosts
D. $64$ subnets and $256$ hosts

ugcnetcse-nov2017-paper3 ip-addressing computer-networks

Answer key

## 4.38.9 Ip Addressing: UGC NET CSE | September 2013 | Part 3 | Question: 12 top

Given the IP address 201.14.78.65 and the subset mask 255.255.255.224. What is the subset address?

A. 201.14.78.32 B. 201.14.78.64 C. 201.14.78.65 D. 201.14.78.224

ugcnetcse-sep2013-paper3 computer-networks ip-addressing

Answer key

## 4.38.10 Ip Addressing: UGC NET CSE | September 2013 | Part 3 | Question: 8 top

Which of the following is the size of Network bits and Host bits of Class A of IP address?

A. Network bits 7, Host bits 24
B. Network bits 14, Host bits 16
C. Network bits 15, Host bits 16
D. Network bits 16, Host bits 16

ugcnetcse-sep2013-paper3 computer-networks ip-addressing

Answer key

## 4.39 Ip Packet (2) top

### 4.39.1 Ip Packet: UGC NET CSE | December 2012 | Part 2 | Question: 9 top

If a packet arrive with M-bit value is ‘1’ and a fragmentation offset value ‘0’, then it is ____ fragement.

A. First
B. Middle
C. Last
D. All of the above

ugcnetcse-dec2012-paper2 computer-networks ip-packet

Answer key

### 4.39.2 Ip Packet: UGC NET CSE | June 2014 | Part 3 | Question: 69 top

Which of the following is used in the options field of $IPv4$?

A. Strict source routing
B. Loose source routing
C. Time stamp
D. All of the above

ugcnetjune2014iii computer-networks ip-packet routing

Answer key

## 4.40 Ipv6 (1) top

### 4.40.1 Ipv6: UGC NET CSE | November 2017 | Part 3 | Question: 30 top

Which of the following statements are true?

a. The fragmentation fields in the base header are set to zero for all datagrams in $IPv6$
b. The header checksum is not supported in $IPv6$
c. The $IPv4$ header options are supported in $IPv6$ extension header
d. Both fragmentation in $IPv6$ and $IPv4$ are done only by the sender.

A. (a) and (b) Only
B. (b) and (c) Only
C. (a) and (c) Only
D. (a), (b) and (c)

ugcnetcse-nov2017-paper3 computer-networks ip-addressing ipv6

Answer key

## 4.41 Lan Technologies (2) top

### 4.41.1 Lan Technologies: UGC NET CSE | December 2010 | Part 2 | Question: 27 top

The baud rate is

A. Always equal to the bit transfer rate
B. Equal to twice the bandwidth of an ideal channel
C. Not equal to the signalling rate
D. Equal to half of the bandwidth of an ideal channel

ugcnetcse-dec2010-paper2 computer-networks lan-technologies

Answer key

### 4.41.2 Lan Technologies: UGC NET CSE | January 2017 | Part 3 | Question: 25 top

Suppose there are N stations in a slotted LAN. Each station attempts to transmit with a probability P in each time slot. The probability that only one station transmits in a given slot is____

A. $nP(1-P)^{n-1}$
B. $nP$
C. $P(1-P)^{n-1}$
D. $n^P(1-P)^{n-1}$

ugcnetcse-jan2017-paper3 computer-networks lan-technologies

Answer key

## 4.42 Link State Routing (1) top

### 4.42.1 Link State Routing: UGC NET CSE | January 2017 | Part 2 | Question: 30 top

In link state routing algorithm after construction of link state packets, new routes are computed using :

A. DES algorithm
B. Dijkstra's algorithm
C. RSA algorithm
D. Packets

ugcnetjan2017ii computer-networks link-state-routing

Answer key

## 4.43 Loopback Address (1) top

### 4.43.1 Loopback Address: UGC NET CSE | June 2019 | Part 2 | Question: 85 top

Consider the following two statements with respect to IPv4 in computer networking:

P: The loopback (IP) address is a member of class B network.

Q: The loopback (IP) address is used to send a packet from host to itself.

What can you say about the statements P and Q?

A. P – True; Q – False
B. P – False; Q – True
C. P – True; Q – True
D. P – False; Q – False

ugcnetcse-june2019-paper2 ip-addressing loopback-address

Answer key

## 4.44 Mesh Topology (3) top

### 4.44.1 Mesh Topology: UGC NET CSE | December 2014 | Part 3 | Question: 25 top

For $n$ devices in a network, _____ number of duplex-mode links are required for a mesh topology.

A. $n(n+1)$
B. $n(n-1)$
C. $n(n+1)/2$
D. $n(n-1)/2$

ugcnetcse-dec2014-paper3 computer-networks network-topologies mesh-topology

Answer key

### 4.44.2 Mesh Topology: UGC NET CSE | June 2016 | Part 2 | Question: 27 top

In a fully connected mesh network with 10 computers, total ___ number of cables are required and ____ number od ports are required for each device

A. 40, 9
B. 45, 10
C. 45, 9
D. 50, 10

ugcnetcse-june2016-paper2 computer-networks mesh-topology

Answer key

### 4.44.3 Mesh Topology: UGC NET CSE | June 2019 | Part 2 | Question: 81 top

A fully connected network topology is a topology in which there is a direct link between all pairs of nodes. Given a fully connected network with $n$ nodes, the number of direct links as a function of $n$ can be expressed as

A. $\frac{n(n+1)}{2}$
B. $\frac{(n+1)}{2}$
C. $\frac{n}{2}$
D. $\frac{n(n-1)}{2}$

ugcnetcse-june2019-paper2 mesh-topology

Answer key

## 4.45 Mobile Communication (7) top

### 4.45.1 Mobile Communication: UGC NET CSE | December 2012 | Part 2 | Question: 3 top

The GSM network is divided into the following three major systems:

A. SS, BSS, OSS
B. BSS, BSC, MSC
C. CELL, BSS, OSS
D. SS, CELL, MSC

ugcnetcse-dec2012-paper2 computer-networks communication mobile-communication

Answer key

### 4.45.2 Mobile Communication: UGC NET CSE | December 2012 | Part 3 | Question: 26 top

Which are the classifications of data used in Mobile Applications?

A. Private data, Shared data, User data
B. Public data, User data, Virtual data
C. Private data, Public data, Shared data
D. Public data, Virtual data, User data

ugcnetcse-dec2012-paper3 mobile-communication computer-networks

Answer key

## 4.45.3 Mobile Communication: UGC NET CSE | December 2012 | Part 3 | Question: 30 top

Match the following with respect to the Mobile Computing Architecture.

| | |
|---|---|
| a. Downlink control | 1. 100 Mbps |
| b. Data communication data rate | 2. Residency Latency (RL) |
| c. The average duration of user's stay in cell | 3. Sending data from a BS to MD |
| d. FDDI bandwidth | 4. 2-Mbps |

| | a | b | c | d |
|---|---|---|---|---|
| A | 2 | 1 | 4 | 3 |
| B | 3 | 4 | 2 | 1 |
| C | 4 | 1 | 2 | 1 |
| D | 4 | 3 | 1 | 2 |

ugcnetcse-dec2012-paper3 mobile-communication computer-networks non-gate

Answer key

## 4.45.4 Mobile Communication: UGC NET CSE | December 2014 | Part 2 | Question: 46 top

Consider the following statements $S1$ and $S2$ :

$S1$ : A hard handover is one in which the channel in the source cell is retained and used for a while in parallel with the channel in the target cell.

$S2$ : A soft handover is one in which the channel in the source cell is released and only then the channel in the target cell is engaged.

A. $S1$ is true and $S2$ is not true.
B. $S1$ is not true and $S2$ is true.
C. Both $S1$ and $S2$ are true.
D. Both $S1$ and $S2$ are not true.

ugcnetcse-dec2014-paper2 mobile-communication

Answer key

## 4.45.5 Mobile Communication: UGC NET CSE | December 2015 | Part 2 | Question: 24 top

In a typical mobile phone system with hexagonal cells, it is forbidden to reuse a frequency band in adjacent cells. If 840 frequencies are available, how many can be used in a given cell?

A. 280
B. 210
C. 140
D. 120

ugcnetcse-dec2015-paper2 mobile-communication computer-networks non-gate

Answer key

## 4.45.6 Mobile Communication: UGC NET CSE | June 2012 | Part 3 | Question: 60 top

Radio signals generally propagate according to the following mechanisms:

A. Modulation, Amplification, Scattering
B. Reflection, Diffraction, Scattering
C. Amplification, Diffraction, Modulation
D. Reflection, Amplification, Diffraction

ugcnetcse-june2012-paper3 computer-networks transmission-media mobile-communication

Answer key

### 4.45.7 Mobile Communication: UGC NET CSE | June 2014 | Part 2 | Question: 26 top

Match the following with respect to the mobile computing technologies :

| | List-I | | List-II |
|---|---|---|---|
| a. | GPRS | i. | An Integrated digital radio standard |
| b. | GSM | ii. | 3G wireless/Mobile technology |
| c. | UMTS | iii. | Nine different schemes for modulation and error correction |
| d. | EDGE | iv. | An emerging wireless service that offeres a mobile data |

**Codes :**

A. a-iii; b-iv; c-ii; d-i
B. a-iv; b-i; c-ii; d-iii
C. a-ii; b-iii; c-iv; d-i
D. a-ii; b-i; c-iv; d-iii

ugcnetcse-june2014-paper2 computer-networks mobile-communication

Answer key

## 4.46 Modulation (2) top

### 4.46.1 Modulation: UGC NET CSE | November 2017 | Part 3 | Question: 26 top

Quadrature Amplitude Modulation means changing both

A. Frequency and phase of the carrier
B. Frequency and Amplitude of the carrier
C. Amplitude and phase of the carrier
D. Amplitude and Wavelength of the carrier

ugcnetcse-nov2017-paper3 computer-networks modulation physical-layer

Answer key

### 4.46.2 Modulation: UGC NET CSE | September 2013 | Part 3 | Question: 10 top

Which of the following is an bit rate of an 8-PSK signal having 2500 Hz bandwidth?

A. 2500 bps
B. 5000 bps
C. 7500 bps
D. 20000 bps

ugcnetcse-sep2013-paper3 computer-networks modulation

Answer key

## 4.47 Multimedia Protocol (1) top

### 4.47.1 Multimedia Protocol: UGC NET CSE | December 2015 | Part 3 | Question: 14 top

In electronic mail, which of the following protocols allows the transfer of multimedia messages?

A. IMAP
B. SMTP
C. POP 3
D. MIME

ugcnetcse-dec2015-paper3 computer-networks multimedia-protocol

Answer key

## 4.48 Multiple Access Protocol (1) top

### 4.48.1 Multiple Access Protocol: UGC NET CSE | August 2016 | Part 3 | Question: 28 top

A slotted ALOHA network transmits $200$ bits frames using a shared channel with $200$ kbps bandwidth. If the system (all stations put together) produces $1000$ frames per second, then the throughput of the system is _____.

A. $0.268$
B. $0.468$
C. $0.368$
D. $0.568$

ugcnetcse-aug2016-paper3 computer-networks multiple-access-protocol transmission-media

Answer key

## 4.49 Multiplexing (2) top

### 4.49.1 Multiplexing: UGC NET CSE | December 2008 | Part 2 | Question: 35 top

A high performance switching and multiplexing technology that utilizes fixed length packets to carry different types of traffic is:

A. ATM B. ADSL C. SONET D. None of the above

ugcnetcse-dec2008-paper2 computer-networks multiplexing network-switching

Answer key

### 4.49.2 Multiplexing: UGC NET CSE | December 2010 | Part 2 | Question: 30 top

The threshold effect in demodulator is

A. Exhibited by all demodulator, when the input signal to noise ratio is low.
B. The rapid fall on output signal to noise ratio when the input signal to noise ratio fall below a particular value.
C. The property exhibited by all A.M. suppressed carrier coherent demodulator.
D. The property exhibited by correlation receiver.

ugcnetcse-dec2010-paper2 computer-networks multiplexing

Answer key

## 4.50 Network Addressing (2) top

### 4.50.1 Network Addressing: UGC NET CSE | December 2015 | Part 3 | Question: 10 top

The combination of an IP address and a port number is known as _____

A. network number
B. socket address
C. subnet mask number
D. MAC address

computer-networks network-addressing ugcnetcse-dec2015-paper3

Answer key

### 4.50.2 Network Addressing: UGC NET CSE | December 2015 | Part 3 | Question: 13 top

In a classful addressing the IP address with $0$(zero) as network number:

A. refers to the current network
B. refers to broadcast on the local network
C. refers to the broadcast on a distant network
D. refers to loopback testing

computer-networks network-addressing ugcnetcse-dec2015-paper3

Answer key

## 4.51 Network Layer (1) top

### 4.51.1 Network Layer: UGC NET CSE | December 2015 | Part 2 | Question: 40 top

Which of the following is not a congestion policy at network layer?

A. Flow Control Policy
B. Packet Discard Policy
C. Packet Lifetime Management Policy
D. Routing Algorithm

ugcnetcse-dec2015-paper2 computer-networks network-layer

Answer key

## 4.52 Network Layering (5) top

### 4.52.1 Network Layering: UGC NET CSE | December 2012 | Part 2 | Question: 17 top

The design issue of Datalink layer in OSI Reference Model is

A. Framing
B. Representation of bits
C. Synchronization of bits
D. Connection control

ugcnetcse-dec2012-paper2 computer-networks network-layering

Answer key

### 4.52.2 Network Layering: UGC NET CSE | December 2013 | Part 3 | Question: 45 top

Which layer of OSI reference model is responsible for decomposition of messages and generation of sequence numbers to ensure correct re-composition from end to end of the network?

A. Physical B. Data-link C. Transport D. Application

ugcnetcse-dec2013-paper3 computer-networks network-layering

Answer key

### 4.52.3 Network Layering: UGC NET CSE | June 2012 | Part 2 | Question: 15 top

Decryption and encryption of data are responsibility of which of the following layer?

A. Physical layer
B. Data link layer
C. Presentation layer
D. Session layer

ugcnetcse-june2012-paper2 computer-networks network-layering

Answer key

### 4.52.4 Network Layering: UGC NET CSE | June 2012 | Part 2 | Question: 6 top

Both hosts and routers and TCP/IP protocol software. However, routers do not use protocol from all layers. The layer for which the protocol software is not needed by a router is

A. Layer – 5 (Application)
B. Layer – 1 (Physical)
C. Layer – 3 (Internet)
D. Layer – 4 (Network Interface)

ugcnetcse-june2012-paper2 computer-networks network-layering

Answer key

### 4.52.5 Network Layering: UGC NET CSE | June 2014 | Part 2 | Question: 05 top

Match the following :

| | List – I | | List – II |
|---|---|---|---|
| a. | Physical layer | i. | Allow resources to network access |
| b. | Datalink layer | ii. | Move packets from one destination to other |
| c. | Network layer | iii. | Process to process message delivery |
| d. | Transport layer | iv. | Transmission of bit stream |
| e. | Application Layer | v. | Formation of frames |

**Codes :**

A. a-iv; b-v; c-ii; d-iii; e-i
B. a-v; b-iv; c-i; d-ii; e-iii
C. a-i; b-iii; c-ii; d-v; e-iv
D. a-i; b-ii; c-iv; d-iii; e-v

ugcnetcse-june2014-paper2 computer-networks network-layering

Answer key

## 4.53 Network Protocols (10) top

### 4.53.1 Network Protocols: UGC NET CSE | August 2016 | Part 2 | Question: 30 top

Which of the following protocols is used by email server to maintain a central repository that can be accessed from any machine ?

A. $POP3$ B. $IMAP$ C. $SMTP$ D. $DMSP$

ugcnetcse-aug2016-paper2 computer-networks network-protocols

Answer key

### 4.53.2 Network Protocols: UGC NET CSE | August 2016 | Part 3 | Question: 26 top

Consider the following statements :

A. High speed Ethernet works on optic fiber.

B. A point to point protocol over Ethernet is a network protocol for encapsulating $PPP$ frames inside Ethernet frames.

C. High speed Ethernet does not work on optic fiber.

D. A point to point protocol over Ethernet is a network protocol for encapsulating Ethernet frames inside $PPP$ frames.

Which of the following is correct ?

A. $A$ and $B$ are true; $C$ and $D$ are false.
B. $A$ and $B$ are false; $C$ and $D$ are true.
C. $A, B, C$ and $D$ are true.
D. $A, B, C$ and $D$ are false.

ugcnetcse-aug2016-paper3 computer-networks ethernet network-protocols

Answer key

### 4.53.3 Network Protocols: UGC NET CSE | December 2010 | Part 2 | Question: 29 top

Which of the following file transfer protocols use $TCP$ and establishes two virtual circuits between the local and remote server ?

A. $FTP$
B. $TFTP$
C. $TELNET$
D. $NFS$

ugcnetcse-dec2010-paper2 computer-networks network-protocols

Answer key

### 4.53.4 Network Protocols: UGC NET CSE | December 2012 | Part 2 | Question: 8 top

The Mobile Application Protocol (MAP) typically runs on top of which protocol?

A. SNMP (Simple Network Management Protocol)
B. SMTP (Simple Mail Transfer Protocol)
C. SS7 (Signalling System 7)
D. HTTP (Hyper Text Transfer Protocol)

ugcnetcse-dec2012-paper2 computer-networks network-protocols

Answer key

### 4.53.5 Network Protocols: UGC NET CSE | June 2010 | Part 2 | Question: 26 top

The _____ field is the SNMP PDV reports an error in a response message.

A. Error index
B. Error status
C. Set request
D. Agent index

ugcnetcse-june2010-paper2 computer-networks network-protocols

Answer key

### 4.53.6 Network Protocols: UGC NET CSE | October 2020 | Part 2 | Question: 33 top

Protocols in which the sender sends one frame and then waits for an acknowledgment before proceeding for next frame are called as _____

A. Simplex protocols
B. Unrestricted simplex protocols
C. Simplex stop and wait protocols
D. Restricted simplex protocols

ugcnetcse-oct2020-paper2 computer-networks network-protocols

Answer key

### 4.53.7 Network Protocols: UGC NET CSE | October 2020 | Part 2 | Question: 59 top

Post office protocol (POP) is a message access protocol which is used to extract message for client. In this regards, which of the following are true?

a. POP has two modes, Delete mode and keep
b. In Delete mode, mail is deleted from mail box after each retrival
c. In Delete mode, mail is deleted from mail box before each retriveal
d. In keep mode, mail is deleted before retrival

Choose the correct answer from the options given

below:

$(e)$ In keep mode, mail remains in mail box after retrival

A. $(a)$ and $(b)$ only
B. $(a)$ , $(d)$ and $(e)$ only
C. $(a)$, $(b)$, $(c)$ and $(d)$ only
D. $(a)$, $(b)$ and $(e)$ only

ugcnetcse-oct2020-paper2 computer-networks network-protocols

Answer key

### 4.53.8 Network Protocols: UGC NET CSE | October 2020 | Part 2 | Question: 72 top

Match List I with List II

| | List I | | List II |
|---|---|---|---|
| $(A)$ | Serial Line IP (SLIP) | $(I)$ | Application layer |
| $(B)$ | Border Gateway Protocol (BGP) | $(II)$ | Transport layer |
| $(C)$ | User Data Protocol (UDP) | $(III)$ | Data Link layer |
| $(D)$ | Simple Network Management Protocol | $(IV)$ | Network layer |

Choose the correct answer from the options given below:

A. $A-I, B-II, C-III, D-IV$
B. $A-III, B-IV, C-II, D-I$
C. $A-II, B-III, C-IV, D-I$
D. $A-III, B-I, C-IV, D-II$

ugcnetcse-oct2020-paper2 computer-networks network-protocols

Answer key

### 4.53.9 Network Protocols: UGC NET CSE | September 2013 | Part 2 | Question: 42 top

A method to provide secure transmission of email is called

A. TLS
B. SA
C. IPSec
D. PGP

ugcnetsep2013ii computer-networks network-security network-protocols

Answer key

### 4.53.10 Network Protocols: UGC NET CSE | September 2013 | Part 3 | Question: 11 top

Match the following :

| | | | |
|---|---|---|---|
| (a) | UDP | (i) | Message Transfer Protocol |
| (b) | OSPF | (ii) | Bit Oriented Protocol |
| (c) | SMTP | (iii) | Interior Gateway Routing Protocol |
| (d) | HDLC | (iv) | Connectionless Transport Protocol |

**Codes:**

A. (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)
B. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)
C. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)
D. (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)

ugcnetcse-sep2013-paper3 computer-networks network-protocols

Answer key

## 4.54 Network Security (18) top

### 4.54.1 Network Security: UGC NET CSE | August 2016 | Part 2 | Question: 46 top

An attacker sits between the sender and receiver and captures the information and retransmits to the receiver after some time without altering the information. This attack is called as _____.

A. Denial of service attack
B. Masquarade attack
C. Simple attack
D. Complex attack

ugcnetcse-aug2016-paper2 computer-networks network-security

Answer key

## 4.54.2 Network Security: UGC NET CSE | December 2010 | Part 2 | Question: 20 top

Which of the following is the process by which a user's access to physical data in the application is limited, based on his privileges?

A. Authorization
B. Authentication
C. Access Control
D. All of these

ugcnetcse-dec2010-paper2 computer-networks network-security

Answer key

## 4.54.3 Network Security: UGC NET CSE | December 2012 | Part 2 | Question: 37 top

AES is a round cipher based on the Rijndal Algorithm that uses a 128 – bit block of data. AES has three different configurations. _____ rounds with a key size of 128-bits, _____ rounds with a key size of 192 bits and _____ rounds with a key size of 256 –bits

A. 5, 7, 15
B. 10, 12, 14
C. 5, 6, 7
D. 20, 12, 14

ugcnetcse-dec2012-paper2 computer-networks network-security

Answer key

## 4.54.4 Network Security: UGC NET CSE | December 2012 | Part 3 | Question: 72 top

A cryptarithmetic problem of the type

```
  SEND
+ MORE
 MONEY
```

Can be solved efficiently using

A. depth first technique
B. breadth first technique
C. constraint satisfaction technique
D. bidirectional technique

ugcnetcse-dec2012-paper3 computer-networks network-security

Answer key

## 4.54.5 Network Security: UGC NET CSE | December 2012 | Part 3 | Question: 8 top

Using RSA algorithm, what is the value of cipher text C, if the plain text M=5 and p=3, q=11 and d=7?

A. 33
B. 5
C. 25
D. 26

ugcnetcse-dec2012-paper3 computer-networks network-security

Answer key

## 4.54.6 Network Security: UGC NET CSE | December 2015 | Part 2 | Question: 25 top

Using p=3, q=13, d=7 and e=3 in the RSA algorithm, what is the value of ciphertext for a plain text 5?

A. 13
B. 21
C. 26
D. 33

ugcnetcse-dec2015-paper2 computer-networks network-security

Answer key

## 4.54.7 Network Security: UGC NET CSE | December 2018 | Part 2 | Question: 66 top

Which of the following statement/s is/are ***true***?

i. Firewalls can screen traffic going into or out of an organization.
ii. Virtual private networks can stimulate an old leased network to provide certain desirable properties.

Choose the correct answer from the code given below:

A. (i) only
B. (ii) only
C. Both (i) and (ii)
D. Neither (i) nor (ii)

ugcnetcse-dec2018-paper2 network-security

Answer key

### 4.54.8 Network Security: UGC NET CSE | December 2018 | Part 2 | Question: 90 top

Suppose that everyone in a group of $N$ people wants to communicate secretly with $(N-1)$ other people using symmetric key cryptographic system. The communication between any two persons should not be decodable by the others in the group. The number of keys required in the system as a whole to satisfy the confidentiality requirement is

A. $N(N-1)$ B. $N(N-1)/2$ C. $2N$ D. $(N-1)^2$

ugcnetcse-dec2018-paper2 computer-networks network-security

Answer key

### 4.54.9 Network Security: UGC NET CSE | June 2009 | Part 2 | Question: 48 top

After sending a message, the sender should not be able to, at a later date, deny having sent the message, is referred to as :

A. Authenticity
B. Non-Repudiability
C. Auditability
D. Repudiability

ugcnetcse-june2009-paper2 network-security

Answer key

### 4.54.10 Network Security: UGC NET CSE | June 2010 | Part 2 | Question: 5 top

For your ATM debit card, you have a $4$-decimal-digit personal secret code. In the absence of any clue, a brute-force attack takes time-$'t'$ to crack the code on an ATM terminal. Therefore $'t'$ is the secure-time for a customer to report in case the card is misplaced. Your Bank has decided to facilitate an increased secure-time. Out of the following, which option should provide the largest rise in the value of $'t'$?

A. Instead of 4-decimal-digits, maintain the personal secret code in 4-hexadecimal-digits.
B. Instead of 4-decimal digits, maintain a 5-decimal-digit personal secret code.
C. Reduce the processing speed of the ATM terminals to the half of their current speed.
D. None of the above provides any improvement.

ugcnetcse-june2010-paper2 computer-networks network-security

Answer key

### 4.54.11 Network Security: UGC NET CSE | June 2014 | Part 2 | Question: 30 top

SET, an open encryption and security specification model that is designed for protecting credit card transactions on the internet, stands for

A. Secure Electronic Transaction
B. Secular Enterprise for Transaction
C. Security Electronic Transmission
D. Secured Electronic Termination

ugcnetcse-june2014-paper2 computer-networks network-security

Answer key

### 4.54.12 Network Security: UGC NET CSE | June 2016 | Part 2 | Question: 29 top

If there are $N$ people in the world and are using secret key encryption and decryption for privacy purpose, then the number of secret keys required will be

A. $N$ B. $(N-1)$ C. $\frac{N(N-1)}{2}$ D. $\frac{N(N+1)}{2}$

ugcnetcse-june2016-paper2 computer-networks network-security

Answer key

## 4.54.13 Network Security: UGC NET CSE | June 2016 | Part 2 | Question: 46 top

An attacker sits between customer and banker and captures the information from the customer and retransmits to the banker by altering the information . This attack is called as

A. Masquerade attack
B. Replay attack
C. Passive attack
D. Denial of service attack

ugcnetcse-june2016-paper2 computer-networks network-security

Answer key

## 4.54.14 Network Security: UGC NET CSE | June 2016 | Part 3 | Question: 30 top

Encrypt the plain text message "EXTRANET " using Transposition cipher technique with the following key :

| | | | | | |
|---|---|---|---|---|---|
| 3 | 5 | 2 | 1 | 4 | (Cipher text) |
| 1 | 2 | 3 | 4 | 5 | (Plain text) |

Using 'Z' as bogus character.

A. TAXERTZENZ B. EXTRANETZZ C. EZXZTRZANZETD. EXTZRANZETZ

ugcnetcse-june2016-paper3 computer-networks network-security

Answer key

## 4.54.15 Network Security: UGC NET CSE | June 2019 | Part 2 | Question: 89 top

The ability to inject packets into the Internet with a false source address is known as

A. Man-in-the-middle attack
B. IP phishing
C. IP sniffing
D. IP spoofing

ugcnetcse-june2019-paper2 network-security

Answer key

## 4.54.16 Network Security: UGC NET CSE | Junet 2015 | Part 3 | Question: 27 top

Which are two modes of IP security?

A. Transport and certificate
B. Transport and tunnel
C. Certificate and tunnel
D. Preshared and transport

ugcnetcse-june2015-paper3 computer-networks network-security

Answer key

## 4.54.17 Network Security: UGC NET CSE | Junet 2015 | Part 3 | Question: 28 top

A message "COMPUTERNETWORK" encrypted (ignore quotes) using columnar transposition cipher with a key "LAYER". The encrypted message is

A. CTTOEWMROPNRUEK
B. MROUEKCTTPNROEW
C. OEWPNRCTTUEKMRO
D. UEKPNRMROOEQCTT

ugcnetcse-june2015-paper3 computer-networks network-security

Answer key

## 4.54.18 Network Security: UGC NET CSE | October 2020 | Part 2 | Question: 89 top

Given below are two statements:

Statement $I$: In Ceasar Cipher each letter of Plain text is replaced by another letter for encryption

Statement $II$: Diffie-Hellman algorithm is used for exchange of secret key

In the light of the above statements, choose the correct answer from the options given below

A. Both Statement $I$ and Statement $II$ are true
B. Both Statement $I$ and Statement $II$ are false

C. Statement $I$ is correct but Statement $II$ is false
D. Statement $I$ is incorrect but Statement $II$ is true

ugcnetcse-oct2020-paper2 computer-networks network-security

Answer key

## 4.55 Network Switching (5) top

### 4.55.1 Network Switching: UGC NET CSE | August 2016 | Part 3 | Question: 25 top

Suppose transmission rate of a channel is $32$ kbps. If there are '$8'$ routes from source to destination and each packet $p$ contains $8000$ bits. Total end to end delay in sending packet $P$ is _____.

A. $2$ sec B. $3$ sec C. $4$ se D. $1$ sec

ugcnetcse-aug2016-paper3 computer-networks network-switching

Answer key

### 4.55.2 Network Switching: UGC NET CSE | December 2011 | Part 2 | Question: 10 top

Which of the following network access standard disassembler is used for connection station to a packet switched network ?

A. $X.3$ B. $X.21$ C. $X.25$ D. $X.75$

ugcnetcse-dec2011-paper2 computer-networks network-switching

Answer key

### 4.55.3 Network Switching: UGC NET CSE | January 2017 | Part 3 | Question: 28 top

In a packet switching network, if the message size is 48 bytes and each packet contains a header of 3 bytes. If 24 packets are required to transmit the message, the packet size is

A. 2 bytes B. 1 byte C. 4 bytes D. 5 bytes

ugcnetcse-jan2017-paper3 computer-networks network-switching

Answer key

### 4.55.4 Network Switching: UGC NET CSE | July 2018 | Part 2 | Question: 46 top

Which of the following statements are true?

a. Three broad categories of Network Switched Networks are Circuit Switched Networks, Packet Switched Networks and Message Switched Networks
b. In packet switching there is no need of reserving the set up phase
c. In packet switching the resources are used on demand basis for the set up of packets
i. Circuit Switched Networks

A. a and b only B. b and c only C. a and c only D. a, b and c

ugcnetcse-july2018-paper2 computer-networks network-switching

Answer key

### 4.55.5 Network Switching: UGC NET CSE | June 2012 | Part 2 | Question: 16 top

In which circuit switching, delivery of data is delayed because data must be stored and retrieved from RAM?

A. Space division B. Time division C. Virtual D. Packet

ugcnetcse-june2012-paper2 computer-networks network-switching

Answer key

## 4.56 Network Topologies (4) top

### 4.56.1 Network Topologies: UGC NET CSE | December 2009 | Part 2 | Question: 29 top

In case of Bus/Tree topology signal balancing issue is overcome by

(A) Modulation

(B) Polling

(C) Segmentation

(D) Strong transmitter

ugcnetcse-dec2009-paper2 computer-networks network-topologies

### 4.56.2 Network Topologies: UGC NET CSE | December 2009 | Part 2 | Question: 46 top

The single stage network is also called

(A) one sided network

(B) two sided network

(C) recirculating network

(D) pipeline network

ugcnetcse-dec2009-paper2 computer-networks network-topologies

Answer key

### 4.56.3 Network Topologies: UGC NET CSE | December 2011 | Part 2 | Question: 8 top

Hub is a term used with

A. A Star Networks B. A Ring Networks C. A Router D. A Bridge

ugcnetcse-dec2011-paper2 computer-networks network-topologies

Answer key

### 4.56.4 Network Topologies: UGC NET CSE | June 2013 | Part 3 | Question: 16 top

In a fully connected mesh network with n devices, there are _____ physical channels to link all devices.

A. n(n-1)/2 B. n(n+1)/2 C. 2n D. 2n+1

ugcnetcse-june2013-paper3 computer-networks network-topologies

Answer key

## 4.57 Osi Model (11) top

### 4.57.1 Osi Model: UGC NET CSE | August 2016 | Part 2 | Question: 29 top

Match the following :

| | List-I | | List-II |
|---|---|---|---|
| a. | Session layer | i. | Virtual terminal software |
| b. | Application layer | ii. | Semantics of the information transmitted |
| c. | Presentation layer | iii. | Flow Control |
| d. | Transport Layer | iv. | Manage dialogue Control |

**Codes :**

A. a-iv, b-i, c-ii, d-iii
B. a-i, b-iv, c-ii, d-iii
C. a-iv, b-i, c-iii, d-ii
D. a-iv, b-ii, c-i, d-iii

ugcnetcse-aug2016-paper2 computer-networks osi-model

Answer key

## 4.57.2 Osi Model: UGC NET CSE | December 2008 | Part 2 | Question: 17 top

Congestion control is done by :

A. Network layer
B. Physical layer
C. Presentation layer
D. Application layer

ugcnetcse-dec2008-paper2 computer-networks osi-model

Answer key

## 4.57.3 Osi Model: UGC NET CSE | December 2008 | Part 2 | Question: 18 top

Assertion (A): Twisted pairs are widely used as transmission medium.

Reasoning (R): Twisted pairs have adequate performance and low cost.

A. Both (A) and (R) are true and (R) is the correct explanation for (A)
B. Both (A) and (R) are true but (R) is not the correct explanation
C. (A) is true but (R) is false
D. (A) is false but (R) is true

ugcnetcse-dec2008-paper2 computer-networks osi-model

Answer key

## 4.57.4 Osi Model: UGC NET CSE | December 2008 | Part 2 | Question: 6 top

An example of a layer that is absent in broadcast networks is :

A. Physical layer
B. Presentation layer
C. Network layer
D. Application layer

ugcnetcse-dec2008-paper2 computer-networks osi-model network-layer

Answer key

## 4.57.5 Osi Model: UGC NET CSE | December 2012 | Part 2 | Question: 43 top

Data Encryption Techniques are particularly used for _____

A. protecting data in Data Communication System
B. reduce Storage Space Requirement
C. enhances Data Integrity
D. decreases Data Integrity

ugcnetcse-dec2012-paper2 computer-networks osi-model

Answer key

## 4.57.6 Osi Model: UGC NET CSE | December 2013 | Part 2 | Question: 1 top

When data and acknowledgement are sent in same frame, this is called as

A. Piggy packing
B. Piggy backing
C. Back packing
D. Good packing

ugcnetcse-dec2013-paper2 computer-networks osi-model

Answer key

## 4.57.7 Osi Model: UGC NET CSE | December 2013 | Part 2 | Question: 2 top

Encryption and decryption is the responsibility of ____ Layer

A. Physical
B. Network
C. Application
D. Datalink

ugcnetcse-dec2013-paper2 computer-networks osi-model

Answer key

### 4.57.8 Osi Model: UGC NET CSE | June 2010 | Part 2 | Question: 28 top

End-to-End connectivity is provided from Last-to-Last in

A. Network layer
B. Session layer
C. Transport layer
D. Data link layer

ugcnetcse-june2010-paper2 computer-networks osi-model

Answer key

### 4.57.9 Osi Model: UGC NET CSE | June 2010 | Part 2 | Question: 29 top

What services does the internet layer provide ?

1. Quality of service
2. Routing
3. Addressing
4. Connection oriented delivery
5. Framing bits

A. $1,2,3$
B. $2,3,4$
C. $1,3,4,5$
D. $2,3,4,5$

ugcnetcse-june2010-paper2 computer-networks osi-model

Answer key

### 4.57.10 Osi Model: UGC NET CSE | June 2013 | Part 3 | Question: 18 top

Match the following :

| | | | |
|---|---|---|---|
| a. | Data link Layer | i. | Flow Control |
| b. | Network Layer | ii. | Node to node delivery |
| c. | Transport Layer | iii. | Mail services |
| d. | Application Layer | iv. | Routing |

**Codes :**

A. a-ii, b-i, c-iv, d-iii
B. a-ii, b-iv, c-i, d-iii
C. a-ii, b-i, c-iii, d-iv
D. a-ii, b-iv, c-iii, d-i

ugcnetcse-june2013-paper3 computer-networks osi-model

Answer key

### 4.57.11 Osi Model: UGC NET CSE | June 2014 | Part 3 | Question: 70 top

Which layers of the OSI reference model are host-to-host layers ?

A. Transport, Session, Presentation, Application
B. Network, Transport, Session, Presentation
C. Data-link, Network, Transport, Session
D. Physical, Data-link, Network, Transport

ugcnetjune2014iii computer-networks osi-model

Answer key

## 4.58 Osi Protocol (5) top

### 4.58.1 Osi Protocol: UGC NET CSE | December 2012 | Part 3 | Question: 10 top

Match the following :

| | List-I | | List-II |
|---|---|---|---|
| a. | Application layer | i. | TCP |
| b. | Transport Layer | ii. | HDLC |
| c. | Network Layer | iii. | HTTP |
| d. | Data Link Layer | iv. | BGP |

**Codes :**

A. a-ii, b-i, c-iv, d-iii
B. a-iii, b-iv, c-i, d-ii
C. a-iii, b-i, c-iv, d-ii
D. a-ii, b-iv, c-i, d-iii

ugcnetcse-dec2012-paper3 computer-networks osi-protocol

Answer key

### 4.58.2 Osi Protocol: UGC NET CSE | January 2017 | Part 2 | Question: 26 top

Match the following Layers and Protocols for a user browsing with SSL :

| | | | |
|---|---|---|---|
| a. | Application of layer | i. | TCP |
| b. | Transport layer | ii. | IP |
| c. | Network layer | iii. | PPP |
| d. | Datalink layer | iv. | HTTP |

**Code :**

A. a-iv, b-i, c-ii, d-iii
B. a-iii, b-ii, c-i, d-iv
C. a-ii, b-iii, c-iv, d-i
D. a-iii, b-i, c-iv, d-ii

ugcnetjan2017ii computer-networks osi-protocol

Answer key

### 4.58.3 Osi Protocol: UGC NET CSE | June 2012 | Part 3 | Question: 11 top

X.25 is _____ Network

A. Connection Oriented Network
B. Connection Less Network
C. Either Connection Oriented or Connection Less
D. Neither Connection Oriented nor Connection Less

ugcnetcse-june2012-paper3 computer-networks osi-protocol

Answer key

### 4.58.4 Osi Protocol: UGC NET CSE | June 2012 | Part 3 | Question: 41 top

Which layer of OSI reference model uses the ICMP (Internet Control Message Protocol)?

A. Transport layer
B. Data link layer
C. Network layer
D. Application layer

ugcnetcse-june2012-paper3 computer-networks osi-protocol

Answer key

### 4.58.5 Osi Protocol: UGC NET CSE | Junet 2015 | Part 2 | Question: 26 top

Which of the following protocols is an application layer protocol that establishes, manages and terminates multimedia sessions?

A. Session Maintenance Protocol
B. Real-time Streaming Protocol
C. Real-time Transport Control Protocol
D. Session Initiation Protocol

ugcnetcse-june2015-paper2 osi-protocol computer-networks

Answer key

## 4.59 Physical Layer (4) top

### 4.59.1 Physical Layer: UGC NET CSE | December 2010 | Part 2 | Question: 28 top

How much bandwidth is there in $1$ micron of spectrum at a wavelength of $1$ micron ?

A. $300$ MHz B. $3$ GHz C. $300$ THz D. $30$ KHz

ugcnetcse-dec2010-paper2 computer-networks physical-layer

Answer key

### 4.59.2 Physical Layer: UGC NET CSE | December 2013 | Part 2 | Question: 3 top

An analog signal carries 4 bits in each signal unit. If 1000 signal units are sent per second, then baud rate and bit rate of the signal are _____ and _____

A. 4000 bauds/sec & 1000 bps
B. 2000 bauds/sec & 1000 bps
C. 1000 bauds/sec & 500 bps
D. 1000 bauds/sec & 4000 bps

ugcnetcse-dec2013-paper2 computer-networks osi-model physical-layer

Answer key

### 4.59.3 Physical Layer: UGC NET CSE | July 2018 | Part 2 | Question: 42 top

The period of a signal is 100 ms. Its frequency is ____

A. $100^3$ Hertz B. $10^{-2}$ KHz C. $10^{-3}$ KHz D. $10^5$ Hertz

ugcnetcse-july2018-paper2 computer-networks physical-layer

Answer key

### 4.59.4 Physical Layer: UGC NET CSE | June 2013 | Part 3 | Question: 21 top

Which one of the following media is multidrop?

A. Shielded Twisted pair cable
B. Unshielded Twisted pair cable
C. Thick Coaxial cable
D. Fiber Optic cable

ugcnetcse-june2013-paper3 computer-networks physical-layer

Answer key

## 4.60 Port Numbers (1) top

### 4.60.1 Port Numbers: UGC NET CSE | Junet 2015 | Part 2 | Question: 27 top

Match the following port numbers with their uses:

| | List – I | | List – II |
|---|---|---|---|
| a. | 23 | $i.$ | World wide web |
| b. | 25 | $ii.$ | Remote login |
| c. | 80 | $iii.$ | USENET news |
| d. | 119 | $iv.$ | E-mail |

A. $a-iv, b-i, c-ii, d-iii$
B. $a-ii, b-i, c-iv, d-iii$
C. $a-ii, b-iv, c-iii, d-i$
D. $a-ii, b-iv, c-i, d-iii$

ugcnetcse-june2015-paper2 computer-networks port-numbers

Answer key

## 4.61 Propagation Delay (1) top

### 4.61.1 Propagation Delay: UGC NET CSE | June 2019 | Part 2 | Question: 83 top

You are designing a link layer protocol for a link with bandwidth of $1$ Gbps ($10^9$ bits/second) over a fiber link with length of $800$ km. Assume the speed of light in this medium is $200000$ km/second. What is the propagation delay in this link?

A. $1$ millisecond
B. $2$ milliseconds

C. $3$ milliseconds

D. $4$ milliseconds

ugcnetcse-june2019-paper2 propagation-delay

Answer key

## 4.62 Propagation Time (1) top

### 4.62.1 Propagation Time: UGC NET CSE | December 2014 | Part 3 | Question: 28 top

What is the propagation time if the distance between the two points is $48,000$ ? Assume the propagation speed to be $2.4 \times 10^8$ metre/second in cable.

A. $0.5$ ms

B. $20$ ms

C. $50$ ms

D. $200$ ms

ugcnetcse-dec2014-paper3 computer-networks propagation-time

Answer key

## 4.63 Protocol (1) top

### 4.63.1 Protocol: UGC NET CSE | December 2014 | Part 2 | Question: 50 top

Match the following :

| | List – I | | List – II |
|---|---|---|---|
| a. | Call Control protocol | i. | Interface between Base Transceiver Station (BTS) and Base Station Controller (BSC) |
| b. | A-bis | ii. | Spread spectrum |
| c. | BSMAP | iii. | Connection management |
| d. | CDMA | iv. | Works between Mobile Switching Centre ( MSC) and Base Station Subsystem (BSS) |

**Codes :**

A. a-iii, b-iv, c-i, d-ii

B. a-iii, b-i, c-iv, d-ii

C. a-i, b-ii, c-iii, d-iv

D. a-iv, b-iii, c-ii, d-i

ugcnetcse-dec2014-paper2 computer-networks protocol

Answer key

## 4.64 Pure Aloha (1) top

### 4.64.1 Pure Aloha: UGC NET CSE | June 2016 | Part 3 | Question: 27 top

A Pure ALOHA Network transmits 200 bit frames using a shared channel with 200 kbps bandwidth . If the system (all stations put together) produces 500 frames per sec , then the throughput of the system is

A. 0.384

B. 0.184

C. 0.286

D. 0.586

ugcnetcse-june2016-paper3 computer-networks pure-aloha

Answer key

## 4.65 Rarp Protocol (1) top

### 4.65.1 Rarp Protocol: UGC NET CSE | June 2019 | Part 2 | Question: 82 top

What is the name of the protocol that allows a client to send a broadcast message with its MAC address and receive an IP address in reply?

A. ARP

B. DNS

C. RARP

D. ICMP

ugcnetcse-june2019-paper2 rarp-protocol

Answer key

## 4.66 Routers Bridge Hubs Switches (2) top

### 4.66.1 Routers Bridge Hubs Switches: UGC NET CSE | June 2009 | Part 2 | Question: 49 top

The device which connects dissimilar $LANs$ of different topologies using different sets of communication protocols so that information can flow from one to another is called :

A. Router
B. Bridge
C. Gateway
D. Switch

ugcnetcse-june2009-paper2 computer-networks routers-bridge-hubs-switches

Answer key

### 4.66.2 Routers Bridge Hubs Switches: UGC NET CSE | June 2014 | Part 2 | Question: 02 top

A bridge has access to _____ address in the same network.

A. Physical
B. Network
C. Datalink
D. Application

ugcnetcse-june2014-paper2 routers-bridge-hubs-switches

Answer key

## 4.67 Routing (4) top

### 4.67.1 Routing: UGC NET CSE | December 2011 | Part 2 | Question: 12 top

A station in a network in a network forward incoming packets by placing them on its shortest output queue. What routing algorithm is being used ?

A. Hot potato routing
B. Flooding
C. Static routing
D. Delta routing

ugcnetcse-dec2011-paper2 computer-networks routing

Answer key

### 4.67.2 Routing: UGC NET CSE | December 2015 | Part 3 | Question: 12 top

Consider a subnet with $720$ routers. If a three level hierarchy is chosen with $8$ clusters, each containing $9$ regions of $10$ routers, then total number of entries in the routing table is _____

A. $25$
B. $27$
C. $53$
D. $72$

computer-networks routing ugcnetcse-dec2015-paper3

Answer key

### 4.67.3 Routing: UGC NET CSE | June 2012 | Part 2 | Question: 17 top

In which routing method do all the routers have a common database?

A. Distance vector
B. Link state
C. Link vector
D. Dijikstra method

ugcnetcse-june2012-paper2 computer-networks routing

Answer key

### 4.67.4 Routing: UGC NET CSE | June 2012 | Part 2 | Question: 41 top

What is the routing algorithm used by RIP and IGRP?

A. OSPF
B. Link-state
C. Dynamic
D. Dijikstra vector

computer-networks routing ugcnetcse-june2012-paper2

Answer key

## 4.68 Routing Algorithm (3) top

### 4.68.1 Routing Algorithm: UGC NET CSE | December 2008 | Part 2 | Question: 19 top

An example of a non-adaptive routing algorithm is:

A. Shortest path routing
B. Centralised routing
C. Baran's hot potato routing
D. Baran's backward learning algorithm

ugcnetcse-dec2008-paper2 computer-networks routing-algorithm

Answer key

### 4.68.2 Routing Algorithm: UGC NET CSE | December 2014 | Part 2 | Question: 28 top

Which of the following algorithms is not a broadcast routing algorithm ?

A. Flooding
B. Multidestination routing
C. Reverse path forwarding
D. All of the above

ugcnetcse-dec2014-paper2 computer-networks routing-algorithm

Answer key

### 4.68.3 Routing Algorithm: UGC NET CSE | September 2013 | Part 2 | Question: 6 top

The count-to-infinity problem is associated with

A. Flooding algorithm
B. Hierarchical routing algorithm
C. Distance vector routing algorithm
D. Link state routing algorithm

ugcnetsep2013ii computer-networks routing-algorithm

Answer key

## 4.69 Rsa (1) top

### 4.69.1 Rsa: UGC NET CSE | June 2013 | Part 2 | Question: 33 top

Using data p=3, q=11, n=pq, d=7 in RSA algorithm find the cipher text of the given plain text SUZANNE

A. BUTAEEZ
B. SUZANNE
C. XYZABCD
D. ABCDXYZ

computer-networks network-security rsa ugcnetcse-june2013-paper2

Answer key

## 4.70 Rsa Public Key (1) top

### 4.70.1 Rsa Public Key: UGC NET CSE | December 2013 | Part 2 | Question: 5 top

Using the RSA public key crypto system, if p=13, q=31 and d=7, then the value of e is

A. 101
B. 103
C. 105
D. 107

ugcnetcse-dec2013-paper2 computer-networks network-security rsa-public-key

Answer key

## 4.71 Rsa Security Networks (2) top

### 4.71.1 Rsa Security Networks: UGC NET CSE | January 2017 | Part 3 | Question: 29 top

In RSA public key cryptosystem suppose $n = p * q$ where $p$ and $q$ are primes. $(e, n)$ and $(d, n)$ are public and private keys respectively. Let $M$ be an integer such that $o < M < n$ and $\phi(n) = (p-1)(q-1)$.

Which of the following equations represent RSA public key cryptosystem?

I.

$$C \equiv M^e (\text{mod n})$$
$$M \equiv C^d (\text{mod n})$$

II.
$$ed \equiv 1(\text{mod n})$$

III.
$$ed \equiv 1(\text{mod } \phi(n))$$

IV.
$$C \equiv M^e(\text{mod } \phi(n))$$
$$M \equiv C^d(\text{mod } \phi(n))$$

A. I and II
B. I and III
C. II and III
D. I and IV

ugcnetcse-jan2017-paper3 computer-networks rsa-security-networks

Answer key

### 4.71.2 Rsa Security Networks: UGC NET CSE | June 2019 | Part 2 | Question: 90 top

The RSA encryption algorithm also works in reverse, that is, you can encrypt a message with the private key and decrypt it using the public key. This property is used in

A. instruction detection systems
B. digital signatures
C. data compression
D. certification

ugcnetcse-june2019-paper2 network-security rsa-security-networks computer-networks

Answer key

## 4.72 Serial Communication (2) top

### 4.72.1 Serial Communication: UGC NET CSE | December 2013 | Part 3 | Question: 47 top

The start and stop bits are used in serial communication for

A. error detection
B. error correction
C. synchronization
D. slowing down the communication

ugcnetcse-dec2013-paper3 computer-networks serial-communication

Answer key

### 4.72.2 Serial Communication: UGC NET CSE | June 2014 | Part 2 | Question: 04 top

The bit rate of a signal is $3000$ bps. If each signal unit carries $6$ bits, the baud rate of the signal is _____.

A. $500$ baud/sec
B. $1000$ baud/sec
C. $3000$ baud/sec
D. $18000$ baud/sec.

ugcnetcse-june2014-paper2 computer-networks serial-communication

Answer key

## 4.73 Session Layer (1) top

### 4.73.1 Session Layer: UGC NET CSE | Junet 2015 | Part 2 | Question: 28 top

Which of the following is not associated with the session layer?

A. Dialog control
B. Token management
C. Semantics of the information transmitted
D. synchronization

ugcnetcse-june2015-paper2 computer-networks session-layer

Answer key

## 4.74 Signalling (1) top

### 4.74.1 Signalling: UGC NET CSE | August 2016 | Part 3 | Question: 59 top

Which of the following is a source coding technique ?

A. Huffman coding
B. Arithmetic coding
C. Run-length coding
D. DPCM

ugcnetcse-aug2016-paper3 computer-networks signalling

Answer key

## 4.75 Signals (1) top

### 4.75.1 Signals: UGC NET CSE | June 2013 | Part 3 | Question: 20 top

The _____ measure the relative strengths of two signals or a signal at two different points.

A. frequency B. attenuation C. throughput D. decibel

ugcnetcse-june2013-paper3 computer-networks signals

Answer key

## 4.76 Sliding Window (4) top

### 4.76.1 Sliding Window: UGC NET CSE | December 2009 | Part 2 | Question: 27 top

What is the maximum window size in sliding window protocol used in a computer network ?

(A) 4

(B) 8

(C) 15

(D) 16

ugcnetcse-dec2009-paper2 computer-networks sliding-window

Answer key

### 4.76.2 Sliding Window: UGC NET CSE | December 2012 | Part 3 | Question: 4 top

The technique of temporarily delaying outgoing acknowledgements so that they can be hooked onto the next outgoing data frame is known as

A. Bit stuffing B. Piggy backing C. Pipelining D. Broadcasting

ugcnetcse-dec2012-paper3 computer-networks sliding-window

Answer key

### 4.76.3 Sliding Window: UGC NET CSE | January 2017 | Part 3 | Question: 26 top

Station $A$ uses $32$ byte packets t transmit messages to station $B$ using sliding window protocol. The round trip delay between $A$ and $B$ is $40$ milliseconds and the bottleneck bandwidth on the path between $A$ and $B$ is $64$ kbps. The optimal window size of $A$ is

A. $20$ B. $10$ C. $30$ D. $40$

ugcnetcse-jan2017-paper3 computer-networks sliding-window

Answer key

### 4.76.4 Sliding Window: UGC NET CSE | June 2014 | Part 3 | Question: 72 top

Four bits are used for packed sequence numbering in a slinding window protocol used in a computer network. What is the maximum window size?

A. 4 B. 8 C. 15 D. 16

ugcnetjune2014iii computer-networks sliding-window

Answer key

## 4.77 Slotted Aloha (1) top

### 4.77.1 Slotted Aloha: UGC NET CSE | July 2018 | Part 2 | Question: 41 top

A slotted ALOHA network transmits 200-bit frames using a shared channel with a 200 Kbps bandwidth. Find the throughput of the system (all stations put together) produces 250 frames per second:

A. 49 B. 368 C. 149 D. 151

ugcnetcse-july2018-paper2 computer-networks slotted-aloha

Answer key

## 4.78 Subnetting (2) top

### 4.78.1 Subnetting: UGC NET CSE | December 2018 | Part 2 | Question: 87 top

An Internet Service Provider $(ISP)$ has following chunk of $CIDR$–based $IP$ addresses available with it : $245.248.128.0/20$. The $ISP$ wants to give half of this chunk addresses to organization $A$ and a quarter to organization $B$ while retaining the remaining with itself. Which of the following is a valid allocation of addresses to $A$ and $B$?

A. $245.248.136.0/21$ and $245.248.128.0/22$
B. $245.248.128.0/21$ and $245.248.128.0/22$
C. $245.248.132.0/22$ and $245.248.132.0/21$
D. $245.248.136.0/24$ and $245.248.132.0/21$

ugcnetcse-dec2018-paper2 computer-networks subnetting

### 4.78.2 Subnetting: UGC NET CSE | June 2019 | Part 2 | Question: 84 top

You need $500$ subnets, each with about $100$ usable host address per subnet. What network mask will you assign using a class B network address?

A. $255.255.255.252$
B. $255.255.255.128$
C. $255.255.255.0$
D. $255.255.254.0$

ugcnetcse-june2019-paper2 subnetting

Answer key

## 4.79 Tcp (4) top

### 4.79.1 Tcp: UGC NET CSE | January 2017 | Part 2 | Question: 28 top

A packet whose destination is outside the local $TCP/IP$ network segment is sent to _____.

A. File server B. $DNS$ server C. $DHCP$ server D. Default gateway

ugcnetjan2017ii computer-networks tcp

Answer key

### 4.79.2 Tcp: UGC NET CSE | Junet 2015 | Part 3 | Question: 26 top

Which one of the following control fields in TCP header is used to specify whether the sender has no more data to transmit?

A. FIN B. RST C. SYN D. PSH

ugcnetcse-june2015-paper3 computer-networks tcp

Answer key

### 4.79.3 Tcp: UGC NET CSE | Junet 2015 | Part 3 | Question: 30 top

The minimum payload of a TCP segment is

A. 65,535 B. 65,515 C. 65,495 D. 65,475

ugcnetcse-june2015-paper3 computer-networks tcp

Answer key

### 4.79.4 Tcp: UGC NET CSE | September 2013 | Part 3 | Question: 9 top

Which of the following field of the TCP header tells how many bytes may be sent starting at the byte acknowledged?

A. TCP header length
B. Window size
C. Acknowledgement number
D. Urgent pointer

ugcnetcse-sep2013-paper3 computer-networks tcp

Answer key

## 4.80 Tcp Header (1) top

### 4.80.1 Tcp Header: UGC NET CSE | December 2014 | Part 3 | Question: 27 top

Which of the following is not a field in $TCP$ header ?

A. Sequence number
B. Fragment offset
C. Checksum
D. Window size

ugcnetcse-dec2014-paper3 computer-networks tcp-header

Answer key

## 4.81 Tcp Ip Model (1) top

### 4.81.1 Tcp Ip Model: UGC NET CSE | June 2016 | Part 2 | Question: 28 top

In TCP/IP reference model, the job of ____ layer is to permit hosts to inject packets into any network and travel them independently to the destination

A. Physical
B. Transport
C. Application
D. Host-to-network

ugcnetcse-june2016-paper2 computer-networks tcp-ip-model

Answer key

## 4.82 Tcp Ip Suit Protocols (1) top

### 4.82.1 Tcp Ip Suit Protocols: UGC NET CSE | December 2012 | Part 3 | Question: 22 top

Which provides an interface to the TCP/IP suit protocols in Windows 95 and Windows NT?

A. FTP Active-X Control
B. TCP/IP Active-X Control
C. Calinsock Active-X Control
D. HTML Active-X Control

ugcnetcse-dec2012-paper3 computer-networks tcp-ip-suit-protocols

Answer key

## 4.83 Tele Communication (1) top

### 4.83.1 Tele Communication: UGC NET CSE | Junet 2015 | Part 3 | Question: 25 top

Which transmission technique guarantees that data packets will be received by the receiver in the same order in which they were sent by the sender?

A. Broadcasting
B. Unicasting
C. Packet switching
D. Circuit switching

ugcnetcse-june2015-paper3 computer-networks data-communication tele-communication

Answer key

## 4.84 Token Bucket (1) top

### 4.84.1 Token Bucket: UGC NET CSE | January 2017 | Part 3 | Question: 30 top

A node $X$ on a $10$ Mbps network is regulated by a token bucket. The token bucket is filled at a rate of $2$ Mbps. Token bucket is initially filled with $16$ megabits. The maximum duration taken by $X$ to transmit at full rate of $10$ Mbps is _____secs.

A. $1$ B. $2$ C. $3$ D. $4$

ugcnetcse-jan2017-paper3 computer-networks token-bucket

Answer key

## 4.85 Transmission Media (9) top

### 4.85.1 Transmission Media: UGC NET CSE | August 2016 | Part 2 | Question: 26 top

Which of the following statements is not true with respect to microwaves ?

A. Electromagnetic waves with frequencies from $300$ GHz to $400$ THz.
B. Propagation is line-of-sight.
C. Very high-frequency waves cannot penetrate walls.
D. Use of certain portions of the band requires permission from authorities.

ugcnetcse-aug2016-paper2 computer-networks transmission-media

Answer key

### 4.85.2 Transmission Media: UGC NET CSE | August 2016 | Part 2 | Question: 27 top

In a fast Ethernet cabling, $100$ Base-$TX$ uses _____ cable and maximum segment size is _____.

A. Twisted pair, $100$ metres
B. Twisted pair, $200$ metres
C. Fibre optics, $1000$ metres
D. Fibre optics, $2000$ metres

ugcnetcse-aug2016-paper2 computer-networks transmission-media

Answer key

### 4.85.3 Transmission Media: UGC NET CSE | August 2016 | Part 2 | Question: 28 top

A network with bandwidth of $10$ Mbps can pass only an average of $12,000$ frames per minute with each frame carrying an average of $10,000$ bits. What is the throughput of this network ?

A. $1$ Mbps B. $2$ Mbps C. $10$ Mbps D. $12$ Mbps

ugcnetcse-aug2016-paper2 computer-networks transmission-media

Answer key

### 4.85.4 Transmission Media: UGC NET CSE | August 2016 | Part 3 | Question: 29 top

An analog signal has a bit rate of $8000$ bps and a baud rate of $1000$. Then analog signal has _____ signal elements and carry _____ data elements in each signal.

A. $256, 8$ bits B. $128, 4$ bits C. $256, 4$ bits D. $128, 8$ bits

ugcnetcse-aug2016-paper3 computer-networks transmission-media

Answer key

### 4.85.5 Transmission Media: UGC NET CSE | December 2008 | Part 2 | Question: 10 top

Transmission of N signals, each band limited to fm Hz by TDM, requires a minimum band-width of:

A. fm
B. 2 fm
C. N fm
D. 2N fm

ugcnetcse-dec2008-paper2 computer-networks transmission-media

Answer key

### 4.85.6 Transmission Media: UGC NET CSE | December 2008 | Part 2 | Question: 7 top

The $ATM$ cell is:

1. 48 bytes long
2. 53 bytes long
3. 64 bytes long
4. 69 bytes long

ugcnetcse-dec2008-paper2 computer-networks transmission-media

Answer key

### 4.85.7 Transmission Media: UGC NET CSE | December 2010 | Part 2 | Question: 26 top

Frequency shift keying is used mostly in

A. Radio transmission
B. Telegraphy
C. Telephone
D. None of the above

ugcnetcse-dec2010-paper2 computer-networks transmission-media

Answer key

### 4.85.8 Transmission Media: UGC NET CSE | December 2012 | Part 2 | Question: 23 top

Coaxial cables are categorized by Radio Government rating are adapted for specialized functions. Category RG-59 with impedance 75 $\Omega$ used for

A. Cable TV
B. Ethernet
C. Thin Ethernet
D. Thick Ethernet

ugcnetcse-dec2012-paper2 computer-networks transmission-media

Answer key

### 4.85.9 Transmission Media: UGC NET CSE | June 2016 | Part 2 | Question: 30 top

Optical fiber uses reflection to guide light through a channel, in which angle of incidence is ____ the critical angle

A. equal to
B. less than
C. greater than
D. less than or equal to

ugcnetcse-june2016-paper2 computer-networks transmission-media

Answer key

## 4.86 Unguided Media (1) top

### 4.86.1 Unguided Media: UGC NET CSE | December 2013 | Part 2 | Question: 4 top

The VLF and LF bauds use _____ propagation for communication

A. Ground
B. Sky
C. Line of sight
D. Space

ugcnetcse-dec2013-paper2 computer-networks unguided-media

Answer key

## 4.87 Wifi (1) top

### 4.87.1 Wifi: UGC NET CSE | December 2009 | Part 2 | Question: 49 top

Another name of IEEE 802.11 a is _____

(A) Wi-Max

(B) Fast Ethernet

(C) Wi-Fi

(D) 802.11 g

ugcnetcse-dec2009-paper2 computer-networks wifi

Answer key

## 4.88 Wireless Communication (1) top

### 4.88.1 Wireless Communication: UGC NET CSE | June 2012 | Part 2 | Question: 28 top

Mobile IP provides two basic functions

A. Route discovery and registration
B. Agent discovery and registration
C. IP binding and registration
D. None of the above

ugcnetcse-june2012-paper2 computer-networks mobile-communication wireless-communication

Answer key

## 4.89 Wireless Lan (4) top

### 4.89.1 Wireless Lan: UGC NET CSE | December 2009 | Part 2 | Question: 48 top

Which technology is sometime referred to as wireless cable ?

(A) MMDS

(B) ATM

(C) LMDS

(D) CDMA

ugcnetcse-dec2009-paper2 computer-networks wireless-lan

Answer key

### 4.89.2 Wireless Lan: UGC NET CSE | December 2009 | Part 2 | Question: 50 top

The unlicensed National Information Infrastructure band operates at the _____ frequency

(A) 2.4 GHz

(B) 5 GHz

(C) 33 MHz

(D) 5 MHz

ugcnetcse-dec2009-paper2 computer-networks wireless-lan

Answer key

### 4.89.3 Wireless Lan: UGC NET CSE | December 2015 | Part 2 | Question: 21 top

Which of the following services is not provided by wireless access point in 802.11 WLAN?

A. Association
B. Disassociation
C. Error correction
D. Integration

ugcnetcse-dec2015-paper2 computer-networks wireless-lan

Answer key

### 4.89.4 Wireless Lan: UGC NET CSE | June 2010 | Part 2 | Question: 30 top

What is the maximum operating rate of a wireless LAN using infrared communication ?

A. $1$ mbps
B. $2$ mbps
C. $5$ mbps
D. $11$ mbps

ugcnetcse-june2010-paper2 computer-networks wireless-lan

## 4.90 Wireless Networks (1) top

### 4.90.1 Wireless Networks: UGC NET CSE | December 2008 | Part 2 | Question: 47 top

Assertion (A): Cellular telephone systems can handle a multitude of users .

Reasoning (R): Cellular telephone systems permit extensive frequency reuse in a small local area .

A. Both (A) and (R) are true and (R) is the correct explanation for (A)
B. (B) Both (A) and (R) are true but (R) is not the correct explanation
C. (A) is true but (R) is false
D. (A) is false but (R) is true

ugcnetcse-dec2008-paper2 computer-networks wireless-networks

## 4.91 Wireless Protocol (1) top

### 4.91.1 Wireless Protocol: UGC NET CSE | December 2013 | Part 2 | Question: 42 top

Match the following :

| | List – I | | List – II |
|---|---|---|---|
| a. | Wireless Application Environment | i. | HTTP |
| b. | Wireless Transaction protocol | ii. | IP |
| c. | Wireless Datagram Protocol | iii. | Scripts |
| d. | Wireless | iv. | UDP |

**Codes :**

A. a-ii, b-iv, c-i, d-iii
B. a-iv, b-iii, c-ii, d-i
C. a-iv, b-iii, c-i, d-ii
D. a-iii, b-i, c-iv, d-ii

ugcnetcse-dec2013-paper2 computer-networks wireless-protocol

Answer key

## 4.92 Wireless Transmission (1) top

### 4.92.1 Wireless Transmission: UGC NET CSE | June 2012 | Part 3 | Question: 66 top

If the period of a signal is 1000 ms, then what is its frequency in kiliohertz?

A. $10^{-3}$ KHz
B. $10^{-2}$ KHz
C. $10^{-1}$ KHz
D. 1 KHz

ugcnetcse-june2012-paper3 computer-networks data-communication wireless-transmission

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4.0.1 | D | 4.0.2 | A | 4.0.3 | Q-Q | 4.0.4 | Q-Q | 4.0.5 | D |
| 4.0.6 | X | 4.0.7 | D | 4.0.8 | B | 4.0.9 | Q-Q | 4.0.10 | C |
| 4.0.11 | Q-Q | 4.0.12 | Q-Q | 4.0.13 | D | 4.0.14 | D | 4.0.15 | Q-Q |
| 4.0.16 | D | 4.0.17 | D | 4.0.18 | B | 4.0.19 | Q-Q | 4.0.20 | B |
| 4.0.21 | C | 4.0.22 | B | 4.0.23 | Q-Q | 4.0.24 | Q-Q | 4.0.25 | A |
| 4.0.26 | Q-Q | 4.0.27 | Q-Q | 4.0.28 | Q-Q | 4.0.29 | B | 4.0.30 | Q-Q |
| 4.0.31 | Q-Q | 4.0.32 | Q-Q | 4.0.33 | D | 4.0.34 | Q-Q | 4.0.35 | Q-Q |
| 4.0.36 | Q-Q | 4.0.37 | Q-Q | 4.0.38 | C | 4.0.39 | Q-Q | 4.0.40 | Q-Q |
| 4.0.41 | Q-Q | 4.0.42 | Q-Q | 4.0.43 | Q-Q | 4.0.44 | Q-Q | 4.0.45 | Q-Q |
| 4.0.46 | Q-Q | 4.0.47 | Q-Q | 4.0.48 | Q-Q | 4.0.49 | D | 4.0.50 | Q-Q |
| 4.0.51 | Q-Q | 4.0.52 | Q-Q | 4.0.53 | Q-Q | 4.0.54 | Q-Q | 4.0.55 | Q-Q |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4.0.56 | Q-Q | 4.0.57 | Q-Q | 4.0.58 | B | 4.0.59 | C | 4.0.60 | Q-Q |
| 4.1.1 | D | 4.2.1 | B | 4.3.1 | X | 4.4.1 | A | 4.5.1 | Q-Q |
| 4.6.1 | A | 4.7.1 | B | 4.8.1 | B | 4.9.1 | Q-Q | 4.10.1 | Q-Q |
| 4.11.1 | Q-Q | 4.12.1 | A | 4.12.2 | X | 4.13.1 | D | 4.14.1 | C |
| 4.14.2 | D | 4.14.3 | A | 4.14.4 | B | 4.14.5 | C | 4.14.6 | D |
| 4.14.7 | A | 4.14.8 | C | 4.14.9 | C | 4.15.1 | D | 4.16.1 | D |
| 4.16.2 | A | 4.17.1 | Q-Q | 4.17.2 | C | 4.17.3 | D | 4.17.4 | Q-Q |
| 4.17.5 | C | 4.17.6 | C | 4.17.7 | C | 4.18.1 | Q-Q | 4.18.2 | Q-Q |
| 4.18.3 | Q-Q | 4.18.4 | Q-Q | 4.18.5 | Q-Q | 4.18.6 | Q-Q | 4.18.7 | C |
| 4.19.1 | Q-Q | 4.19.2 | Q-Q | 4.19.3 | B | 4.19.4 | D | 4.19.5 | D |
| 4.19.6 | D | 4.19.7 | C | 4.20.1 | Q-Q | 4.21.1 | B | 4.22.1 | C |
| 4.23.1 | Q-Q | 4.24.1 | B | 4.25.1 | D | 4.25.2 | A | 4.26.1 | C |
| 4.26.2 | D | 4.27.1 | Q-Q | 4.28.1 | Q-Q | 4.28.2 | C | 4.28.3 | Q-Q |
| 4.28.4 | Q-Q | 4.28.5 | C | 4.29.1 | X | 4.30.1 | A | 4.30.2 | B |
| 4.30.3 | D | 4.30.4 | B | 4.30.5 | A | 4.31.1 | A | 4.32.1 | Q-Q |
| 4.32.2 | B | 4.32.3 | B | 4.32.4 | A | 4.33.1 | D | 4.34.1 | D |
| 4.35.1 | B | 4.36.1 | Q-Q | 4.37.1 | A | 4.38.1 | Q-Q | 4.38.2 | C |
| 4.38.3 | Q-Q | 4.38.4 | D | 4.38.5 | C | 4.38.6 | A | 4.38.7 | C |
| 4.38.8 | A | 4.38.9 | B | 4.38.10 | A | 4.39.1 | A | 4.39.2 | D |
| 4.40.1 | D | 4.41.1 | Q-Q | 4.41.2 | A | 4.42.1 | B | 4.43.1 | B |
| 4.44.1 | D | 4.44.2 | C | 4.44.3 | D | 4.45.1 | A | 4.45.2 | C |
| 4.45.3 | B | 4.45.4 | D | 4.45.5 | A | 4.45.6 | B | 4.45.7 | B |
| 4.46.1 | C | 4.46.2 | C | 4.47.1 | C | 4.48.1 | Q-Q | 4.49.1 | Q-Q |
| 4.49.2 | Q-Q | 4.50.1 | B | 4.50.2 | D | 4.51.1 | A | 4.52.1 | A |
| 4.52.2 | C | 4.52.3 | C | 4.52.4 | A | 4.52.5 | A | 4.53.1 | Q-Q |
| 4.53.2 | Q-Q | 4.53.3 | Q-Q | 4.53.4 | C | 4.53.5 | Q-Q | 4.53.6 | C |
| 4.53.7 | D | 4.53.8 | B | 4.53.9 | D | 4.53.10 | C | 4.54.1 | Q-Q |
| 4.54.2 | Q-Q | 4.54.3 | B | 4.54.4 | C | 4.54.5 | D | 4.54.6 | X |
| 4.54.7 | Q-Q | 4.54.8 | Q-Q | 4.54.9 | Q-Q | 4.54.10 | Q-Q | 4.54.11 | A |
| 4.54.12 | C | 4.54.13 | B | 4.54.14 | A | 4.54.15 | D | 4.54.16 | B |
| 4.54.17 | C | 4.54.18 | A | 4.55.1 | Q-Q | 4.55.2 | Q-Q | 4.55.3 | D |
| 4.55.4 | Q-Q | 4.55.5 | B | 4.56.1 | Q-Q | 4.56.2 | Q-Q | 4.56.3 | A |
| 4.56.4 | A | 4.57.1 | Q-Q | 4.57.2 | Q-Q | 4.57.3 | Q-Q | 4.57.4 | Q-Q |
| 4.57.5 | A | 4.57.6 | B | 4.57.7 | C | 4.57.8 | Q-Q | 4.57.9 | Q-Q |
| 4.57.10 | B | 4.57.11 | A | 4.58.1 | C | 4.58.2 | A | 4.58.3 | A |
| 4.58.4 | C | 4.58.5 | D | 4.59.1 | Q-Q | 4.59.2 | D | 4.59.3 | Q-Q |
| 4.59.4 | C | 4.60.1 | D | 4.61.1 | D | 4.62.1 | X | 4.63.1 | B |
| 4.64.1 | B | 4.65.1 | C | 4.66.1 | C | 4.66.2 | A | 4.67.1 | Q-Q |
| 4.67.2 | A | 4.67.3 | B | 4.67.4 | D | 4.68.1 | Q-Q | 4.68.2 | X |
| 4.68.3 | C | 4.69.1 | A | 4.70.1 | B | 4.71.1 | B | 4.71.2 | B |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4.72.1 | C | 4.72.2 | A | 4.73.1 | C | 4.74.1 | Q-Q | 4.75.1 | D |
| 4.76.1 | Q-Q | 4.76.2 | B | 4.76.3 | B | 4.76.4 | C | 4.77.1 | Q-Q |
| 4.78.1 | Q-Q | 4.78.2 | B | 4.79.1 | D | 4.79.2 | A | 4.79.3 | D |
| 4.79.4 | B | 4.80.1 | B | 4.81.1 | X | 4.82.1 | X | 4.83.1 | D |
| 4.84.1 | B | 4.85.1 | Q-Q | 4.85.2 | Q-Q | 4.85.3 | Q-Q | 4.85.4 | Q-Q |
| 4.85.5 | Q-Q | 4.85.6 | Q-Q | 4.85.7 | Q-Q | 4.85.8 | A | 4.85.9 | C |
| 4.86.1 | A | 4.87.1 | Q-Q | 4.88.1 | B | 4.89.1 | Q-Q | 4.89.2 | Q-Q |
| 4.89.3 | C | 4.89.4 | Q-Q | 4.90.1 | Q-Q | 4.91.1 | D | 4.92.1 | A |

### 5.0.1 UGC NET CSE | December 2011 | Part 2 | Question: 23 top

Data security threats include

A. Privacy invasion
B. Hardware failure
C. Fraudulent manipulation of data
D. Encryption and decryption

ugcnetcse-dec2011-paper2 databases

Answer key

### 5.0.2 UGC NET CSE | December 2006 | Part 2 | Question: 20 top

Two phase protocol in a database management system is :

A. a concurrency mechanism that is not deadlock free
B. a recovery protocol used for restoring a database after a crash
C. Any update to the system log done in 2-phases
D. not effective in Database

ugcnetcse-dec2006-paper2

Answer key

### 5.0.3 UGC NET CSE | December 2015 | Part 2 | Question: 14 top

Match the following database terms to their functions :

| | List – I | | List – II |
|---|---|---|---|
| (a) | Normalization | (i) | Enforces match of primary key to foreign key |
| (b) | Data Dictionary | (ii) | Reduces data redundancy in a database |
| (c) | Referential Integrity | (iii) | Defines view(s) of the database for particular user(s) |
| (d) | External Schema | (iv) | Contains metadata describing database structure |

**Codes :**

A. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)
B. (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)
C. (a)-(ii), (b)-(iv), (c)-(iii), (d)-(i)
D. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

ugcnetcse-dec2015-paper2 databases

Answer key

### 5.0.4 UGC NET CSE | June 2012 | Part 3 | Question: 9 top

The problem that occurs when one transaction updates a database item and the transaction fails for some reason is

A. Temporary Select Problem
B. Temporary Modify Problem
C. Dirty Read Problem
D. None

ugcnetcse-june2012-paper3 databases

Answer key

### 5.0.5 UGC NET CSE | December 2009 | Part 2 | Question: 18 top

Match the following :

| | | | |
|---|---|---|---|
| (1) | Determinants | (a) | No attribute can be added |
| (2) | Candidate key | (b) | Uniquely identified a row |
| (3) | Non-redundancy | (c) | A constraint between two attribute |
| (4) | Functional Dependency | (d) | Group of attributes on the left hand side of arrow of function dependency. |

A. 1-d, 2-b, 3-a, 4-c
B. 2-d, 3-a, 1-b, 4-c
C. 4-a, 3-b, 2-c, 1-d
D. 3-a, 4-b, 1-c, 2-d

ugcnetcse-dec2009-paper2 databases

Answer key

### 5.0.6 UGC NET CSE | June 2012 | Part 2 | Question: 7 top

In multiuser database if two users wish to update the same record at the same time, they are prevented from doing so by

A. Jamming
B. Password
C. Documentation
D. Record lock

ugcnetcse-june2012-paper2 databases

Answer key

### 5.0.7 UGC NET CSE | June 2014 | Part 2 | Question: 50 top

Match the following :

| | List – I | | List – II |
|---|---|---|---|
| a. | DDL | i. | LOCK TABLE |
| b. | DML | ii. | COMMIT |
| c. | TCL | iii. | Natural Differece |
| d. | BINARY Operation | iv. | REVOKE |

**Codes :**

A. a-ii; b-i; c-iii; d-iv
B. a-i; b-ii; c-iv; d-iii
C. a-ii; b-iii; c-i; d-iv
D. a-iv; b-i; c-ii; d-iii

ugcnetcse-june2014-paper2 databases

Answer key

### 5.0.8 UGC NET CSE | August 2016 | Part 3 | Question: 12 top

Which one of the following pairs is correctly matched in the context of database design ?

| | List-I(Database term) | | List-II(Definition) |
|---|---|---|---|
| I. | Specialization | A. | Result of taking the union of two or more disjoint (lower-level) entity sets to produce a higher-level entity set. |
| II. | Generalization | B. | Express the number of entities to which another entity can be associated via a relationship set. |
| III. | Aggregation | C. | Result of taking a subset of a higher-level entity set to form a lower-level entity set. |
| IV. | Mapping cardinality | D. | An abstraction in which relationship sets (along with their associated entity sets) are treated as higher-level entity sets, and can participate in relationships. |

**Codes :**

A. I-D, II-A, III-B, IV-C
B. I-D, II-C, III-B, IV-A
C. I-C, II-D, III-A, IV-B
D. I-C, II-A, III-D, IV-B

ugcnetcse-aug2016-paper3

### 5.0.9 UGC NET CSE | December 2012 | Part 2 | Question: 32 top

The User Work Area (UWA) is a set of Program variables declared in the host program to communicate the contents of individual records between

A. DBMS and the Host record
B. Host program and the Host record
C. Host program and DBMS
D. Host program and Host language

ugcnetcse-dec2012-paper2 databases

Answer key

### 5.0.10 UGC NET CSE | December 2004 | Part 2 | Question: 16 top

The E-R model is expressed in terms of :

i. Entities
ii. The relationship among entities
iii. The attributes of the entities

Then

A. (i) and (iii)
B. (i) and (ii)
C. (ii) and (iii)
D. None of the above

ugcnetcse-dec2004-paper2

Answer key

### 5.0.11 UGC NET CSE | December 2006 | Part 2 | Question: 17 top

In DBMS, deferred update means :

A. All the updates are done first but the entries are made in the log file later
B. All the log files entries are made first but the actual updates are done later
C. Every update is done first followed by a writing on the log file
D. Changes in the views are deferred till a query asks for a view

ugcnetcse-dec2006-paper2

Answer key

### 5.0.12 UGC NET CSE | December 2015 | Part 2 | Question: 19 top

A data which improves the performance and accessibility of the database are called:

A. Indexes
B. User Data
C. Application Metadata
D. Data Dictionary

ugcnetcse-dec2015-paper2 databases

Answer key

### 5.0.13 UGC NET CSE | December 2007 | Part 2 | Question: 20 top

Consider the query :

```
SELECT student_name FROM students WHERE
class_name=(SELECT class_name FROM students WHERE math_marks=100);
```

what will be the output ?

A. the list of names of students with 100 marks in mathematics
B. the names of all students of all classes in which at least one student has 100 marks in mathematics

C. the names of all students in all classes having $100$ marks in mathematics
D. the names and class of all students whose marks in mathematics is $100$

ugcnetcse-dec2007-paper2

Answer key

## 5.0.14 UGC NET CSE | December 2007 | Part 2 | Question: 19 top

The end of an SQL command is denoted by :

A. an end-of-line character
B. an ‘enter-key’ marker
C. entering F4 key
D. a semicolon (;)

ugcnetcse-dec2007-paper2

Answer key

## 5.0.15 UGC NET CSE | December 2007 | Part 2 | Question: 17 top

Aggregate functions in SQL are :

A. GREATEST, LEAST and ABS
B. SUM, COUNT and AVG
C. UPPER, LOWER and LENGTH
D. SQRT, POWER and MOD

ugcnetcse-dec2007-paper2

Answer key

## 5.0.16 UGC NET CSE | December 2007 | Part 2 | Question: 16 top

A primary key for an entity is :

A. a candidate key
B. any attribute
C. a unique attribute
D. a superkey

ugcnetcse-dec2007-paper2

Answer key

## 5.0.17 UGC NET CSE | December 2004 | Part 2 | Question: 18 top

The completeness constraint has rules :

A. Supertype, Subtype
B. Total specialization, Partial specialization
C. Specialization, Generalization
D. All of the above

ugcnetcse-dec2004-paper2

Answer key

## 5.0.18 UGC NET CSE | June 2013 | Part 3 | Question: 47 top

Match the following:

| | |
|---|---|
| a. Foreign keys | i. Domain constraint |
| b. Private key | ii. Referential integrity |
| c. Event control action model | iii. Encryption |
| d. Data security | iv. Trigger |

A. a-iii, b-ii, c-i, d-iv
B. a-ii, b-i, c-iv, d-iii
C. a-iii, b-iv, c-i, d-ii
D. a-i, b-ii, c-iii, d-iv

ugcnetcse-june2013-paper3 databases

Answer key

## 5.0.19 UGC NET CSE | December 2004 | Part 2 | Question: 17 top

Specialization is a _____ process.

A. Top - down
B. Bottom - up
C. Both (A) and (B)
D. None of the above

ugcnetcse-dec2004-paper2

Answer key

## 5.0.20 UGC NET CSE | December 2004 | Part 2 | Question: 19 top

The entity type on which the _____ type depends is called the identifying owner.

A. Strong entity
B. Relationship
C. Weak entity
D. E - R

ugcnetcse-dec2004-paper2

Answer key

## 5.0.21 UGC NET CSE | December 2004 | Part 2 | Question: 20 top

Match the following :

| | |
|---|---|
| (i) 2NF | (a) Transitive dependencies eliminated |
| (ii) 3NF | (b) Multivalued attribute removed |
| (iii) 3NF | (c) Contains no partial functional dependencies |
| (iv) 5NF | (d) Contains no join dependency |

A. i-a, ii-c, iii-b, iv-d
B. i-d, ii-c, iii-a, iv-b
C. i-d, ii-c, iii-b, iv-a
D. i-a, ii-b, iii-c, iv-d

ugcnetcse-dec2004-paper2

Answer key

## 5.0.22 UGC NET CSE | December 2015 | Part 2 | Question: 18 top

Which of the following provides the best description of an entity type?

A. A specific concrete object with a defined set of processes (e.g. Jatin with diabetes)
B. A value given to a particular attribute (e.g. height - 230 cm)
C. A thing that we wish to collect data about zero or more, possibly real world examples of it may exist
D. A template for a group of things with the same set of characteristics that may exist in the real world

ugcnetcse-dec2015-paper2 databases

Answer key

## 5.0.23 UGC NET CSE | June 2014 | Part 2 | Question: 46 top

Manager's salary details are hidden from the employee. This is called as

A. Conceptual level data hiding
B. Physical level data hiding
C. External level data hiding
D. Local level data hiding

ugcnetcse-june2014-paper2 databases

Answer key

## 5.0.24 UGC NET CSE | June 2016 | Part 2 | Question: 17 top

Which of the following statement(s) is/are FALSE in the context of Relational DBMS?

I. Views in a database system are important because they with access control by aloowing users to see only a particular subset of the data in the databse
II. E-R diagrams are useful to logically model concepts
III. An update anamoly is when it is not possible to store information unless some other, unrelated information is stored as well
IV. SQL is a procedural language

A. I and IV only B. III and IV only C. I, II and III only D. II, III and IV only

ugcnetcse-june2016-paper2 databases

Answer key

## 5.0.25 UGC NET CSE | June 2016 | Part 3 | Question: 10 top

Which of the following statements is true?

$D_1$: The decomposition of the schema R(A, B, C) into $R_1$(A,B) and $R_2$(A,C) is always lossless

$D_2$: The decomposition of the schema R(A, B, C, D, E) having AD $\rightarrow$ B, C $\rightarrow$ DE, B $\rightarrow$ AE, and AE $\rightarrow$ C, into $R_1$(A,B, D) and $R_2$(A, C, C, D, E) is lossless

A. Both $D_1$ and $D_2$ B. Neither $D_1$ nor $D_2$ C. Only $D_1$ D. Only $D_2$

ugcnetcse-june2016-paper3 databases

Answer key

## 5.0.26 UGC NET CSE | December 2013 | Part 3 | Question: 60 top

Match the following :

| | List – I | | List – II |
|---|---|---|---|
| a. | Secondary Index | i. | Functional Dependency |
| b. | Non-procedural Query language | ii. | B-tree |
| c. | Closure of set of attributes | iii. | Relational Algebric Operation |
| d. | Natural JOIN | iv. | Domain Calculas |

**Codes :**

A. a-i, b-ii, c-iv, d-iii
B. a-ii, b-i, c-iv, d-iii
C. a-i, b-iii, c-iv, d-ii
D. a-ii, b-iv, c-i, d-iii

ugcnetcse-dec2013-paper3 databases

Answer key

## 5.0.27 UGC NET CSE | June 2009 | Part 2 | Question: 22 top

ORACLE supports :

A. inner join and outer join only
B. outer join and semi join only
C. inner join, outer join , semi join only
D. inner join, outer join, semi join and anti join

ugcnetcse-june2009-paper2

Answer key

## 5.0.28 UGC NET CSE | December 2013 | Part 2 | Question: 12 top

GO BOTTOM and SKIP-3 commands are given one after another in a database file of 30 records. It shifts the control to

A. 28-th record
B. 27-th record
C. 3-rd record
D. 4-th record

ugcnetcse-dec2013-paper2 databases

Answer key

## 5.0.29 UGC NET CSE | July 2018 | Part 2 | Question: 68 top

Database systems that store each relation in a separate operating system file may use the operating system's authorization scheme, instead of defining a special scheme themselves. In this case, which of the following is false?

A. The administrator enjoys more control on the grant option

B. It is difficult among the update, delete and insert authorizations
C. cannot store more than one relation in a file
D. Operations on the database are speeded up as the authorization procedure is carried out at the operating system level

ugcnetcse-july2018-paper2 databases

Answer key

### 5.0.30 UGC NET CSE | June 2009 | Part 2 | Question: 18 top

(i) DML includes a query language based on both relation algebra and tuple calculus

(ii) DML includes a query language based on tuple calculus

(iii) DML includes a query language based on relational algebra

(iv) DML includes a query language based on none of the relational algebra and tuple calculus

Which one is correct ?

A. (i) only
B. (ii) only
C. (iii) only
D. (iv) only

ugcnetcse-june2009-paper2

Answer key

### 5.0.31 UGC NET CSE | June 2009 | Part 2 | Question: 21 top

Which construct in SQL is used to test whether a subquery has any tuples in its result ?

A. UNIQUE
B. EXISTS
C. GROUP BY
D. EXCEPT

ugcnetcse-june2009-paper2

Answer key

## 5.1 Aggregation (2) top

### 5.1.1 Aggregation: UGC NET CSE | December 2008 | Part 2 | Question: 31 top

Aggregation is :

A. an abstraction through which relationships are treated as lower level entities
B. an abstraction through which relationships are treated as higher level entities
C. an abstraction through which relationships are not treated at all as entities
D. none of the above

ugcnetcse-dec2008-paper2 databases aggregation

Answer key

### 5.1.2 Aggregation: UGC NET CSE | June 2016 | Part 3 | Question: 39 top

Which of the following statements is correct?

A. Aggregation is a strong type of association between two classes with full ownership
B. Aggregation is a strong type of association between two classes with partial ownership
C. Aggregation is a weak type of association between two classes with partial ownership
D. Aggregation is a weak type of association between two classes with full ownership

ugcnetcse-june2016-paper3 databases aggregation

Answer key

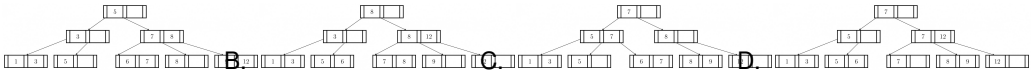
## 5.2 B Tree (2) top

### 5.2.1 B Tree: UGC NET CSE | January 2017 | Part 3 | Question: 12 top

If following sequence of keys are inserted in a B+ tree with K(=3) pointers:

8, 5, 1, 7, 3, 12, 9, 6

Which of the following shall be correct B+ tree?

A. 

ugcnetcse-jan2017-paper3 databases b-tree

Answer key

### 5.2.2 B Tree: UGC NET CSE | June 2014 | Part 2 | Question: 22 top

The upper bound and lower bound for the number of leaves in a B-tree of degree $K$ with height $h$ is given by :

A. $K^h$ and $2\lceil\frac{k}{2}\rceil^{h-1}$
B. $K*h$ and $2\lfloor\frac{k}{2}\rfloor^{h-1}$
C. $K^h$ and $2\lfloor\frac{k}{2}\rfloor^{h-1}$
D. $K*h$ and $2\lceil\frac{k}{2}\rceil^{h-1}$

ugcnetcse-june2014-paper2 databases b-tree

Answer key

## 5.3 B+tree (1) top

### 5.3.1 B+tree: UGC NET CSE | January 2017 | Part 2 | Question: 20 top

The order of a leaf node in a $B^+$ tree is the maximum number of children it can have. Suppose that block size is $1$ kilobytes, the child pointer takes $7$ bytes long and search field value takes $14$ bytes long. The order of the leaf node is _____.

A. $16$
B. $63$
C. $64$
D. $65$

ugcnetjan2017ii databases b+tree

Answer key

## 5.4 Candidate Key (4) top

### 5.4.1 Candidate Key: UGC NET CSE | January 2017 | Part 3 | Question: 8 top

Which one is correct w.r.t. RDBMS?

A. primary key $\subseteq$ super key $\subseteq$ candidate key
B. primary key $\subseteq$ candidate key $\subseteq$ super key
C. super key $\subseteq$ candidate key $\subseteq$ primary key
D. super key $\subseteq$ primary key $\subseteq$ candidate key

ugcnetcse-jan2017-paper3 database-normalization candidate-key

Answer key

### 5.4.2 Candidate Key: UGC NET CSE | June 2016 | Part 2 | Question: 20 top

Consider the following database table having $\mathrm{A, B, C}$ and $\mathrm{D}$ as its four attributes and four possible candidate keys $(\mathrm{I, II, III\ and\ IV})$ for this table :

| A | B | C | D |
|---|---|---|---|
| $a_1$ | $b_1$ | $c_1$ | $d_1$ |
| $a_2$ | $b_3$ | $c_3$ | $d_1$ |
| $a_1$ | $b_2$ | $c_1$ | $d_2$ |

$\mathrm{I}: \{\mathrm{B}\} \quad \mathrm{II}: \{\mathrm{B}, \mathrm{C}\} \quad \mathrm{III}: \{\mathrm{A}, \mathrm{D}\} \quad \mathrm{IV}: \{\mathrm{C}, \mathrm{D}\}$

If different symbols stand for different values in the table $(\mathrm{e.g.}, d_1$ is definitely not equal to $d_2)$, then which of the above could not be the candidate key for the database table?

A. $\mathrm{I}$ and $\mathrm{III}$ only B. $\mathrm{III}$ and $\mathrm{IV}$ only C. $\mathrm{II}$ only D. $\mathrm{I}$ only

ugcnetcse-june2016-paper2 databases candidate-key

Answer key

### 5.4.3 Candidate Key: UGC NET CSE | June 2019 | Part 2 | Question: 35 top

Which of the following key constraints is required for functioning of foreign key in the context relational databases?

A. Unique key B. Primary key C. Candidate key D. Check key

ugcnetcse-june2019-paper2 candidate-key

Answer key

### 5.4.4 Candidate Key: UGC NET CSE | June 2019 | Part 2 | Question: 36 top

In relational database management, which of the following is/are property/properties of candidate key?

P: Uniqueness

Q: Irreducibility

A. P only B. Q only C. Both P and Q D. Neither P nor Q

ugcnetcse-june2019-paper2 candidate-key

Answer key

## 5.5 Cardinality Ratio (1) top

### 5.5.1 Cardinality Ratio: UGC NET CSE | December 2013 | Part 2 | Question: 14 top

Based on the cardinality ratio and participation _____ associated with a relationship type, choose either the Foreign Key Design, the Cross Referencing Design or Mutual Referencing Design.

A. Entity B. Constraints C. Rules D. Keys

ugcnetcse-dec2013-paper2 databases cardinality-ratio

Answer key

## 5.6 Circular Queue (1) top

### 5.6.1 Circular Queue: UGC NET CSE | December 2008 | Part 2 | Question: 34 top

If $(rear == maxsize - 1)\ rear = 0;$ else $rear = rear + 1;$ is required in :

A. circular queue
B. linear queue
C. stack
D. deque

ugcnetcse-dec2008-paper2 data-structures circular-queue

Answer key

## 5.7 Concurrency Control Protocols (1) top

### 5.7.1 Concurrency Control Protocols: UGC NET CSE | December 2009 | Part 2 | Question: 20 top

Which of the following statement is wrong ?
I. 2-phase locking protocol suffer from dead lock.
II. Time stamp protocol suffer from more aborts.
III. A block hole in a DFD is a data store with only inbound flows.
IV. Multivalued dependency among attribute is checked at 3 NF level.
V. An entity-relationship diagram is a tool to represent event model.

(A) I, II, III

(B) II, III, IV

(C) III, IV, V

(D) II, IV, V

ugcnetcse-dec2009-paper2 concurrency-control-protocols

Answer key

## 5.8 Crosstabquery (1) top

### 5.8.1 Crosstabquery: UGC NET CSE | September 2013 | Part 2 | Question: 41 top

Cross_tab displays permit users to view ____ of multidimensional data at a time.

A. One dimension
B. Two dimensions
C. Three dimensions
D. Multidimensions

ugcnetsep2013ii databases crosstabquery

Answer key

## 5.9 Data Dependency (2) top

### 5.9.1 Data Dependency: UGC NET CSE | December 2006 | Part 2 | Question: 18 top

Which statement is false regarding data independence ?

A. Hierarchical data model suffers from data independence
B. Network model suffers from data independence
C. Relational model suffers only from logical data independence
D. Relational model suffers only from physical data independence

ugcnetcse-dec2006-paper2 databases data-dependency

### 5.9.2 Data Dependency: UGC NET CSE | October 2020 | Part 2 | Question: 14 top

Consider a relational schema $S = (U, V, W, X, Y, Z)$ on which the following functional dependencies hold:

$(U \rightarrow V, VW \rightarrow X, Y \rightarrow W, X \rightarrow U)$

Which are the candidate keys among following options?

A. $UY, VY$
B. $UY, VY, XY$
C. $UYZ, VYZ, VWZ$
D. $UYZ, VYZ, XYZ$

ugcnetcse-oct2020-paper2 databases data-dependency

Answer key

## 5.10 Data Integrity (1) top

### 5.10.1 Data Integrity: UGC NET CSE | December 2013 | Part 2 | Question: 15 top

Data Integrity control uses

A. Upper and lower limits on numeric data
B. Passwords to prohibit unauthorized access to files
C. Data dictionary to keep the data
D. Data dictionary to find last access data

ugcnetcse-dec2013-paper2 databases data-integrity

Answer key

## 5.11 Data Mining (2) top

### 5.11.1 Data Mining: UGC NET CSE | December 2009 | Part 2 | Question: 47 top

Analysis of large database to retrieve information is called

(A) OLTP

(B) OLAP

(C) OLDP

(D) OLPP

ugcnetcse-dec2009-paper2 databases data-mining

Answer key

### 5.11.2 Data Mining: UGC NET CSE | January 2017 | Part 2 | Question: 47 top

_____ refers loosely to the process of semi-automatically analyzing large databases to find useful patterns.

A. Datamining B. Data warehousing C. DBMS D. Data mirroring

ugcnetjan2017ii databases data-mining

Answer key

## 5.12 Data Model (2) top

### 5.12.1 Data Model: UGC NET CSE | June 2012 | Part 3 | Question: 8, UGCNET-Dec2012-III: 59 top

Which level of abstraction describes what data are stored in the database?

A. Physical level
B. View level
C. Abstraction level
D. Logical level

ugcnetcse-june2012-paper3 databases data-model ugcnetcse-dec2012-paper3

Answer key

### 5.12.2 Data Model: UGC NET CSE | September 2013 | Part 2 | Question: 39 top

Views are useful for ____ unwanted information, and for collecting together information from more than one relation into a single view.

A. Hiding B. Deleting C. Highlighting D. All of the above

ugcnetsep2013ii databases data-model

Answer key

## 5.13 Database Constraints (1) top

### 5.13.1 Database Constraints: UGC NET CSE | December 2013 | Part 2 | Question: 11 top

The student marks should not be greater than 100. This is

A. Integrity constraint
B. Referential constraint
C. Over-defined constraint
D. Feasible constraint

databases database-constraints ugcnetcse-dec2013-paper2

Answer key

## 5.14 Database Design (1) top

### 5.14.1 Database Design: UGC NET CSE | January 2017 | Part 2 | Question: 16 top

An attribute $A$ of datatype varchar $(20)$ has value 'Ram' and the attribute $B$ of datatype char $(20)$ has value 'Sita' in oracle. The attribute $A$ has _____ memory spaces and $B$ has _____ memory spaces.

A. $20, 20$ B. $3, 20$ C. $3, 4$ D. $20, 4$

ugcnetjan2017ii databases database-design

Answer key

## 5.15 Database Normalization (20) top

### 5.15.1 Database Normalization: UGC NET CSE | December 2008 | Part 2 | Question: 32 top

Suppose R is a relation schema and F is a set of functional dependencies on R. Further, suppose R1 and R2 form a decomposition of R. Then the decomposition is a lossless join decomposition of R provided that:

A. R1∩R2→R1 is in F+
B. R1∩R2→R2 is in F+
C. both R1∩R2→R1 and R1∩R2→R2 functional dependencies are in F+
D. at least one from R1∩R2→R1 and R1∩R2→R2 is in F+

ugcnetcse-dec2008-paper2 databases database-normalization

Answer key

### 5.15.2 Database Normalization: UGC NET CSE | December 2009 | Part 2 | Question: 19 top

A function that has no partial functional dependencies is in _____ form.
(A) 3 NF

(B) 2 NF

(C) 4 NF

(D) BCNF

ugcnetcse-dec2009-paper2 databases database-normalization

Answer key

### 5.15.3 Database Normalization: UGC NET CSE | December 2010 | Part 2 | Question: 17 top

The dependency preservation decomposition is a property to decompose database schema D, in which each functional dependency $X \rightarrow Y$ specified in $F$,

A. Appeared directly in one of the relation schemas $Ri$ in the decomposed D.
B. Could be inferred from dependencies that appear in some $Ri$.
C. Both (A) and (B)
D. None of these

ugcnetcse-dec2010-paper2 databases database-normalization

Answer key

### 5.15.4 Database Normalization: UGC NET CSE | December 2012 | Part 2 | Question: 13 top

Which of the following is true?

A. A relation in BCNF is always in 3NF B. A relation in 3NF is always in BCNF

C. BCNF and 3NF are same

D. A relation in BCNF is not in 3NF

databases ugcnetcse-dec2012-paper2 database-normalization

Answer key

## 5.15.5 Database Normalization: UGC NET CSE | December 2012 | Part 3 | Question: 63 top

The third normal form is based on the concept of_____

A. Closure Dependency

B. Transitive Dependency

C. Normal Dependency

D. Functional Dependency

ugcnetcse-dec2012-paper3 databases database-normalization

Answer key

## 5.15.6 Database Normalization: UGC NET CSE | December 2013 | Part 3 | Question: 59 top

Armstrong $(1974)$ proposed systematic approach to derive functional dependencies. Match the following w.r.t functional dependencies:

| | **List-I** | | **List -II** |
|---|---|---|---|
| a. | Decomposition Rule | i. | If $X \rightarrow Y$ and $Z \rightarrow W$ then $\{X, Z\} \rightarrow \{Y, W\}$ |
| b. | Union rule | ii. | If $X \rightarrow Y$ and $\{Y, W\} \rightarrow Z$ then $\{X, W\} \rightarrow Z$ |
| c. | Composition rule | iii. | If $X \rightarrow Y$ and $X \rightarrow Z$ then $X \rightarrow \{Y, Z\}$ |
| d. | Psedudo transitivity rule | iv. | If $X \rightarrow \{Y, Z\}$ then $X \rightarrow Y$ and $X \rightarrow Z$ |

**Codes:**

A. a-iii, b-ii, c-iv, d-i

B. a-i, b-iii, c-iv, d-ii

C. a-ii, b-i, c-iii, d-iv

D. a-iv, b-iii, c-i, d-ii

ugcnetcse-dec2013-paper3 databases database-normalization

Answer key

## 5.15.7 Database Normalization: UGC NET CSE | December 2014 | Part 2 | Question: 19 top

The best normal form of relation scheme $R(A, B, C, D)$ along with the set of functional dependencies $F = \{AB \rightarrow C, AB \rightarrow D, C \rightarrow A, D \rightarrow B\}$ is

A. Boyce-Codd Normal form

B. Third Normal form

C. Second Normal form

D. First Normal form

ugcnetcse-dec2014-paper2 databases database-normalization

Answer key

## 5.15.8 Database Normalization: UGC NET CSE | December 2014 | Part 2 | Question: 20 top

Identify the minimal key for relational scheme $R(A, B, C, D, E)$ with functional dependencies $F = \{A \rightarrow B, B \rightarrow C, AC \rightarrow D\}$

A. $A$

B. $AE$

C. $BE$

D. $CE$

ugcnetcse-dec2014-paper2 databases database-normalization

Answer key

## 5.15.9 Database Normalization: UGC NET CSE | December 2014 | Part 3 | Question: 10 top

Let $R = ABCDE$ is a relational scheme with functional dependency set $F = \{A \rightarrow B, B \rightarrow C, AC \rightarrow D\}$. The attribute closures of $A$ and $E$ are

A. $ABCD, \phi$

B. $ABCD, E$

C. $\Phi, \phi$

D. $ABC, E$

ugcnetcse-dec2014-paper3 databases database-normalization

Answer key

## 5.15.10 Database Normalization: UGC NET CSE | December 2014 | Part 3 | Question: 12 top

Which of the following is false ?

A. Every binary relation is never be in $BCNF$.
B. Every $BCNF$ relation is in $3NF$.
C. $1NF, 2NF, 3NF$ and $BCNF$ are based on functional dependencies.
D. Multivalued Dependency $(MVD)$ is a special case of Join Dependency $(JD)$

ugcnetcse-dec2014-paper3 databases database-normalization

Answer key

## 5.15.11 Database Normalization: UGC NET CSE | December 2015 | Part 2 | Question: 20 top

A relation R={A,B,C,D,E,F,G} is given with following set of functional dependencies: F={AD→E, BE→F, B→C, AF→G}. Which of the following is a candidate key?

A. A
B. AB
C. ABC
D. ABD

ugcnetcse-dec2015-paper2 databases database-normalization

Answer key

## 5.15.12 Database Normalization: UGC NET CSE | January 2017 | Part 3 | Question: 10 top

For database relation $R(A, B, C, D)$ where the domains of $A, B, C$ and $D$ include only atomic values, only the following functional dependencies and those that can be inferred from them are:

$A \rightarrow C$

$B \rightarrow D$

The relation $R$ is in

A. First normal form but not in second normal form
B. Both in first normal form as well as in second normal form
C. Second normal form but not in third normal form.
D. Both in second normal form as well as in third normal form.

ugcnetcse-jan2017-paper3 databases database-normalization

Answer key

## 5.15.13 Database Normalization: UGC NET CSE | June 2010 | Part 2 | Question: 18 top

Match the following :

| | | | |
|---|---|---|---|
| a. | 2 NF | i. | Transitive dependencies eliminated |
| b. | 3 NF | ii. | Multivalued attribute removed |
| c. | 4 NF | iii. | Contain no partial Functional dependencies |
| d. | 5 NF | iv. | Contains no join dependencies |

**Codes :**

A. a-i, b-iii, c-ii, d-iv
B. a-ii, b-iii, c-iv, d-i
C. a-iii, b-iv, c-i, d-ii
D. a-iii, b-ii, c-iv, d-i

ugcnetcse-june2010-paper2 databases database-normalization

Answer key

## 5.15.14 Database Normalization: UGC NET CSE | June 2013 | Part 3 | Question: 9 top

For a database relation R(a, b, c, d) where the domains of a, b, c, d include only the atomic values. The functional dependency a $\rightarrow$ c, b $\rightarrow$ d holds in the following relation.

A. In 1NF not in 2NF
B. In 2NF not in 3NF
C. In 3NF
D. in 1 NF

ugcnetcse-june2013-paper3 databases database-normalization

Answer key

## 5.15.15 Database Normalization: UGC NET CSE | June 2014 | Part 2 | Question: 49 top

Let $R = \{A, B, C, D, E, F\}$ be a relation schema with the following dependencies $C \rightarrow F$, $E \rightarrow A$, $EC \rightarrow D$, $A \rightarrow B$. Which of the following is a key for $R$ ?

A. CD B. EC C. AE D. AC

ugcnetcse-june2014-paper2 databases database-normalization

Answer key

## 5.15.16 Database Normalization: UGC NET CSE | June 2014 | Part 3 | Question: 22 top

Consider the following relational schemas for a library database :

Book (Title, Author, Catalog_no, Publisher, Year, Price) Collection(Title, Author, Catalog_no) with the following functional dependencies :

I. Title, Author $\rightarrow$ Catalog_no

II. Catalog_no $\rightarrow$ Title, Author, Publisher, Year

III. Publisher, Title, Year $\rightarrow$ Price Assume (Author, Title) is the key for both schemas. Which one of the following is true ?

A. Both Book and Collection are in BCNF.
B. Both Book and Collection are in $3$NF.
C. Book is in $2$NF and Collection in $3$NF.
D. Both Book and Collection are in $2$NF.

ugcnetjune2014iii databases database-normalization

Answer key

## 5.15.17 Database Normalization: UGC NET CSE | June 2019 | Part 2 | Question: 34 top

In relational databases, if relation R is in BCNF, then which of the following is true about relation R?

A. R is in 4NF
B. R is not in 1NF
C. R is in 2NF and not in 3NF
D. R is in 2NF and 3NF

ugcnetcse-june2019-paper2 database-normalization

Answer key

## 5.15.18 Database Normalization: UGC NET CSE | Junet 2015 | Part 3 | Question: 10 top

The Relation

Vendor Order (V_no, V_ord_no, V_name, Qty_sup, unit_price) is in 2NF because

A. Non_key attribute V_name is dependent on V_no which is part of composite key
B. Non_key attribute V_name is dependent on Qty_sup
C. Key attribute Qty_sup is dependent on primary key unit_price
D. Key attribute V_ord_no is dependent on primary key unit_price

ugcnetcse-june2015-paper3 databases database-normalization

Answer key

## 5.15.19 Database Normalization: UGC NET CSE | November 2017 | Part 3 | Question: 9 top

If every non-key attribute is functionally dependent on the primary key, then the relation is in _____

A. First normal form
B. Second normal form
C. Third normal form
D. Fourth normal form

ugcnetcse-nov2017-paper3 database-normalization

Answer key

## 5.15.20 Database Normalization: UGC NET CSE | October 2022 | Part 1 | Question:: 53 top

Match List I with List II :

| | List I | | List II |
|---|---|---|---|
| (A) | BCNF | (I) | It removes multivalued dependency |
| (B) | 3NF | (II) | It is not always dependency preserving |
| (C) | 2 NF | (III) | It removes transitive dependency |
| (D) | 4 NF | (IV) | It removes partial functional dependency |

Choose the correct answer from the options given below:

**Options:-**

- (A)-(III), (B)-(II), (C)-(IV), (D)-(I) ,
**Option ID :- 1521,**
- (A)-(II), (B)-(IV), (C)-(I), (D)-(III) ,
**Option ID :- 1522,**
- (A)-(II), (B)-(III), (C)-(IV), (D)-(I) ,
**Option ID :- 1523,**
- (A)-(II), (B)-(I), (C)-(IV), (D)-(III) ,
**Option ID :- 1524,**

Match List I with List II :

| List I | List II |
|---|---|
| (A) BCNF | (I) It removes multivalued dependency |
| (B) 3NF | (II) It is not always dependency preserving |
| (C) 2NF | (III) It removes transitive dependency |
| (D) 4NF | (IV) It removes partial functional dependency |

Choose the correct answer from the options given below:

A. (A)-(III), (B)-(II), (C)-(IV), (D)-(I)
B. (A)-(II), (B)-(IV), (C)-(I), (D)-(III)
C. (A)-(II), (B)-(III), (C)-(IV), (D)-(I)
D. (A)-(II), (B)-(I), (C)-(IV), (D)-(III)

ugcnetcse-oct2022-paper1 database-normalization

## 5.16 Decomposition (3) top

### 5.16.1 Decomposition: UGC NET CSE | August 2016 | Part 3 | Question: 10 top

Consider the table $R$ with attributes $A, B$ and $C$. The functional dependencies that hold on $R$ are : $A \rightarrow B, C \rightarrow AB$. Which of the following statements is/are True ?

I. The decomposition of $R$ into $R1(C, A)$ and $R2(A, B)$ is lossless.

II. The decomposition of $R$ into $R1(A, B)$ and $R2(B, C)$ is lossy.

A. Only $I$
B. Only $II$
C. Both $I$ and $II$
D. Neither $I$ nor $II$

ugcnetcse-aug2016-paper3 databases database-normalization decomposition

Answer key

### 5.16.2 Decomposition: UGC NET CSE | December 2012 | Part 3 | Question: 56 top

If a relation with a Schema R is decomposed into two relations $R_1$ and $R_2$ such that $(R_1 \cup R_2) = R_1$ then which one of the following is to be satisfied for a lossless joint decomposition ($\rightarrow$ indicates functional independency)

A. $(R_1 \cap R_2) \rightarrow R_1$ or $R_1 \cap R_2 \rightarrow R_2$
B. $R_1 \cap R_2 \rightarrow R_1$
C. $R_1 \cap R_2 \rightarrow R_2$
D. $(R_1 \cap R_2) \rightarrow R_1$ and $R_1 \cap R_2 \rightarrow R_2$

ugcnetcse-dec2012-paper3 databases decomposition

Answer key

### 5.16.3 Decomposition: UGC NET CSE | Junet 2015 | Part 3 | Question: 11 top

The relation schemas $R_1$ and $R_2$ form a Lossless join decomposition of $R$ if and only if

a. $R_1 \cap R_2 \twoheadrightarrow (R_1 - R_2) R_1 \rightarrow R_2$

c. $R_1 \cap R_2 \twoheadrightarrow (R_2 - R_1) R_2 \rightarrow R_1 \cap R_2$

A. a and c

ugcnetcse-june2015-paper3 databases decomposition database-normalization

Answer key

## 5.17 Dependency Preserving (1) top

### 5.17.1 Dependency Preserving: UGC NET CSE | January 2017 | Part 2 | Question: 19 top

Consider a schema $R(MNPQ)$ and functional dependencies $M \rightarrow N, P \rightarrow Q$. Then the decomposition of $R$ into $R_1\,(MN)$ and $R_2\,(PQ)$ is _____.

A. Dependency preserving but not lossless join
B. Dependency preserving and lossless join
C. Lossless join but not dependency preserving
D. Neither dependency preserving nor lossless join.

ugcnetjan2017ii databases dependency-preserving

Answer key

## 5.18 Distributed Database (2) top

### 5.18.1 Distributed Database: UGC NET CSE | August 2016 | Part 3 | Question: 8 top

The Global conceptual Schema in a distributed database contains information about global relations. The condition that all the data of the global relation must be mapped into the fragments, that is, it must not happen that a data item which belongs to a global relation does not belong to any fragment, is called :

A. Disjointness condition
B. Completeness condition
C. Reconstruction condition
D. Aggregation condition

ugcnetcse-aug2016-paper3 databases distributed-database

Answer key

### 5.18.2 Distributed Database: UGC NET CSE | June 2016 | Part 3 | Question: 8 top

In distributed databases, location transparency allows for database users, programmers and administratirs to treat the data as if it is at one location, A SQL query with location transparency needs to specify

A. Inheritances
B. Fragments
C. Locations
D. Local formats

ugcnetcse-june2016-paper3 databases distributed-database

Answer key

## 5.19 Enhanced Er Model (1) top

### 5.19.1 Enhanced Er Model: UGC NET CSE | June 2014 | Part 3 | Question: 23 top

Specialization Lattice stands for

A. An entity type can participate as a subclass in only one specialization.
B. An entity type can participate as a subclass in more than one specialization.
C. An entity type that can participate in one specialization.
D. An entity type that can participate in one generalization.

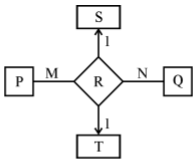
ugcnetjune2014iii databases enhanced-er-model

Answer key

## 5.20 Er Diagram (16) top

## 5.20.1 Er Diagram: UGC NET CSE | August 2016 | Part 2 | Question: 19 top

Consider the following Entity-Relationship $(E-R)$ diagram and three possible relationship sets I, II and III) for this $E-R$ diagram:




I :

| P | Q | S | T |
|---|---|---|---|
| $p_1$ | $q_1$ | $s_1$ | $t_1$ |
| $p_1$ | $q_1$ | $s_1$ | $t_2$ |

II :

| P | Q | S | T |
|---|---|---|---|
| $p_1$ | $q_1$ | $s_1$ | $t_1$ |
| $p_1$ | $q_1$ | $s_2$ | $t_2$ |

III:

| P | Q | S | T |
|---|---|---|---|
| $p_1$ | $q_1$ | $s_1$ | $t_1$ |
| $p_1$ | $q_2$ | $s_1$ | $t_1$ |

If different symbols stand for different values (e.g., $t_1$ is definitely not equal to $t_2$ ), then which of the above could not be the relationship set for the $E-R$ diagram ?

A. I only
B. I and II only
C. II only
D. I, II and III

ugcnetcse-aug2016-paper2 databases er-diagram

Answer key

## 5.20.2 Er Diagram: UGC NET CSE | December 2008 | Part 2 | Question: 30 top

An entity has:

(i) a set of properties

(ii) a set of properties and values for all the properties

(iii) a set of properties and the values for some set of properties may non-uniquely identify an entity

(iv) a set of properties and the values for some set of properties may uniquely identify an entity

Which of the above are valid?

A. (i) only
B. (ii) only
C. (iii) only
D. (iv) only

ugcnetcse-dec2008-paper2 databases er-diagram

Answer key

## 5.20.3 Er Diagram: UGC NET CSE | December 2009 | Part 2 | Question: 16 top

The E-R model is expressed in term of
I. Entities
II. The relationship among entities.
III. The attributes of the entities.
IV. Functional relationship.

(A) I, II

(B) I, II, IV

(C) II, II, IV

(D) I, II, III

ugcnetcse-dec2009-paper2 databases er-diagram

Answer key

## 5.20.4 Er Diagram: UGC NET CSE | December 2009 | Part 2 | Question: 17 top

Specialization is _____ process.

(A) top-down

(B) bottom up

(C) both (A) and (B)

(D) none of these

ugcnetcse-dec2009-paper2 databases er-diagram

Answer key

## 5.20.5 Er Diagram: UGC NET CSE | December 2010 | Part 2 | Question: 16 top

In generalisation, the differences between members of an entity is

A. Maximized B. Minimized C. Both (A) & (B) D. None of these

ugcnetcse-dec2010-paper2 databases er-diagram

Answer key

## 5.20.6 Er Diagram: UGC NET CSE | December 2013 | Part 2 | Question: 13 top

An E-R model includes

I. An ER diagram portraying entity types.
II. Attributes for each entity type.
III. Relationships among entity types.
IV. Semantic integrity constrains that reflects the business rules about data not captured in the ER diagram

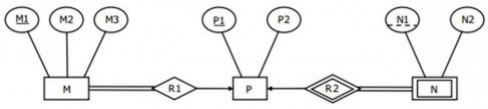
A. I, II, III and IV B. I and IV C. I, II and IV D. I and III

ugcnetcse-dec2013-paper2 databases er-diagram

Answer key

## 5.20.7 Er Diagram: UGC NET CSE | December 2013 | Part 3 | Question: 55 top

Consider the following ER diagram:




The minimum number of tables required to represent M, N, P, $R_1$, $R_2$ is

A. 2 B. 3 C. 4 D. 5

ugcnetcse-dec2013-paper3 databases er-diagram

Answer key

## 5.20.8 Er Diagram: UGC NET CSE | December 2013 | Part 3 | Question: 57 top

Find the false statement:

A. The relationship construct known as the weak relationship type was defined by Dey, Storey & Barron (1999)
B. A weak relationship occurs when two relationship types are linked by either Event- Precedent sequence or Condition- recedent sequence.
C. Conceptual model is not accurate representation of “Universe of interest”.
D. Ternary, Quaternary and Quintary relationships are shown through a series of application scenario’s and vignette’s.

ugcnetcse-dec2013-paper3 databases er-diagram

Answer key

## 5.20.9 Er Diagram: UGC NET CSE | December 2014 | Part 2 | Question: 18 top

What kind of mechanism is to be taken into account for converting a weak entity set into strong entity set in entity-relationship diagram

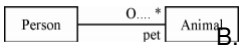
A. Generalization
B. Aggregation
C. Specialization
D. Adding suitable attributes

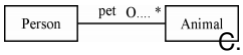
ugcnetcse-dec2014-paper2 databases er-diagram

Answer key

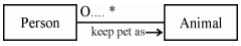
## 5.20.10 Er Diagram: UGC NET CSE | December 2014 | Part 3 | Question: 38 top

How to express that some person keeps animals as pets?

A. 


B. 


C.

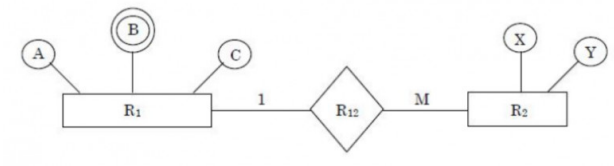

D. 


ugcnetcse-dec2014-paper3 databases er-diagram

Answer key

## 5.20.11 Er Diagram: UGC NET CSE | December 2019 | Part 2 | Question: 23 top

Find minimum number of tables required for converting the following entity relationship diagram into relational database?




A. $2$
B. $4$
C. $3$
D. $5$

ugcnetcse-dec2019-paper2 er-diagram

Answer key

## 5.20.12 Er Diagram: UGC NET CSE | January 2017 | Part 2 | Question: 18 top

Let $M$ and $N$ be two entities in an $E-R$ diagram with simple single value attributes. $R_1$ and $R_2$ are two relationship between $M$ and $N$, where as $R_1$, is one-to-many and $R_2$, is many-to-many.

The minimum number of tables required to represent $M, N, R_1$, and $R_2$, in the relational model are _____.

A. $4$
B. $6$
C. $7$
D. $3$

ugcnetjan2017ii databases er-diagram

Answer key

## 5.20.13 Er Diagram: UGC NET CSE | July 2018 | Part 2 | Question: 64 top

Relations produced from E-R Model will always be in _____

A. 1 NF
B. 2 NF
C. 3 NF
D. 4 NF

databases er-diagram database-normalization ugcnetcse-july2018-paper2

Answer key

## 5.20.14 Er Diagram: UGC NET CSE | June 2010 | Part 2 | Question: 16 top

An entity instance is a single occurrence of an _____.

A. Entity type
B. Relationship type
C. Entity and relationship type
D. None of these

ugcnetcse-june2010-paper2 databases er-diagram

Answer key

### 5.20.15 Er Diagram: UGC NET CSE | Junet 2015 | Part 2 | Question: 49 top

Which of the following statements is false about weak entity set?

A. Weak entities can be deleted automatically when their strong entity is deleted
B. Weak entity set avoids the data duplication and consequent possible inconsistencies caused by duplicating the key of the string entity
C. A weak entity set has no primary keys unless attributes of the strong entity set on which it depends are included
D. Tuples in a weak entity set are not partitioned according to their relationship with tuples with a strong entity set

ugcnetcse-june2015-paper2 er-diagram databases

Answer key

### 5.20.16 Er Diagram: UGC NET CSE | Junet 2015 | Part 3 | Question: 7 top

Let $E_1$ and $E_2$ be two entities in E-R diagram with simple single valued attributes. $R_1$ and $R_2$ are two relationships between $E_1$ and $E_2$ where $R_1$ is one-many and $R_2$ is many-many. $R_1$ and $R_2$ do not have any attribute of their own. How many minimum number of tables are required to represent this situation in the Relational Model?

A. 4 B. 3 C. 2 D. 1

databases er-diagram ugcnetcse-june2015-paper3

Answer key

## 5.21 File System (1) top

### 5.21.1 File System: UGC NET CSE | Junet 2015 | Part 2 | Question: 19 top

Database application were directly built on top of file system to overcome the following drawbacks of using file-systems:

a. Data redundancy and inconsistency
b. Difficulty in accessing data
c. Data isolation
d. Integrity problems

A. a B. a and d C. a, b, and c D. a, b, c, and d

ugcnetcse-june2015-paper2 databases file-system

Answer key

## 5.22 Generalization (1) top

### 5.22.1 Generalization: UGC NET CSE | June 2010 | Part 2 | Question: 17 top

Generalization is _____ process.

A. Top-down B. Bottom up C. Both (A) & (B) D. None of these

ugcnetcse-june2010-paper2 databases generalization

Answer key

## 5.23 Granularity (1) top

### 5.23.1 Granularity: UGC NET CSE | June 2012 | Part 3 | Question: 4 top

What is Granularity?

A. The size of database
B. The size of data item
C. The size of record
D. The size of file

ugcnetcse-june2012-paper3 databases granularity

Answer key

## 5.24 Hierarchical Database (1) top

### 5.24.1 Hierarchical Database: UGC NET CSE | July 2018 | Part 2 | Question: 63 top

In a Hierarchical database, a hashing function is used to locate the ____

A. Collision B. Root C. Foreign Key D. Records

ugcnetcse-july2018-paper2 databases hierarchical-database

Answer key

## 5.25 Indexing (1) top

### 5.25.1 Indexing: UGC NET CSE | June 2014 | Part 2 | Question: 48 top

A clustering index is created when _____.

A. Primary key is declared and ordered
B. No key ordered
C. Foreign key ordered
D. There is no key and no order

ugcnetcse-june2014-paper2 databases indexing

Answer key

## 5.26 Java (1) top

### 5.26.1 Java: UGC NET CSE | December 2012 | Part 2 | Question: 22 top

In DML, RECONNCT command cannot be used with

A. OPTIONAL Set B. FIXED Set C. MANDATOR Set D. All of the above

ugcnetcse-dec2012-paper2 programming java bad-question

Answer key

## 5.27 Joins (1) top

### 5.27.1 Joins: UGC NET CSE | December 2015 | Part 3 | Question: 63 top

Consider the following three tables $R, S$ and $T$. In this question, all the join operations are natural joins ($\bowtie$). ($\pi$) is the projection operation of a relation:

| $R$ | |
|---|---|
| $A$ | $B$ |
| 1 | 2 |
| 3 | 2 |
| 5 | 6 |
| 7 | 8 |
| 9 | 8 |

| $S$ | |
|---|---|
| $B$ | $C$ |
| 6 | 2 |
| 2 | 4 |
| 8 | 1 |
| 8 | 3 |
| 2 | 5 |

| $T$ | |
|---|---|
| $A$ | $C$ |
| 7 | 1 |
| 1 | 2 |
| 9 | 3 |
| 5 | 4 |
| 3 | 5 |

Possible answer tables for this question are also given as below:

| $A$ | $B$ | $C$ |
|---|---|---|
| 1 | 2 | 4 |
| 1 | 2 | 5 |
| 3 | 2 | 4 |
| 3 | 2 | 5 |
| 5 | 6 | 2 |
| 7 | 8 | 1 |
| 7 | 8 | 3 |
| 9 | 8 | 1 |
| 9 | 8 | 3 |

(a)

| $A$ | $B$ | $C$ |
|---|---|---|
| 1 | 2 | 2 |
| 3 | 2 | 5 |
| 5 | 6 | 4 |
| 7 | 8 | 1 |
| 9 | 8 | 3 |

(b)

| $A$ | $B$ | $C$ |
|---|---|---|
| 1 | 6 | 2 |
| 3 | 2 | 5 |
| 5 | 2 | 4 |
| 7 | 8 | 1 |
| 9 | 8 | 3 |

(c)

| $A$ | $B$ | $C$ |
|---|---|---|
| 3 | 2 | 5 |
| 7 | 8 | 1 |
| 9 | 8 | 3 |

(d)

| A | B | C |
|---|---|---|
| 1 | 2 | 4 |
| 1 | 2 | 5 |
| 3 | 2 | 4 |
| 3 | 2 | 5 |
| 5 | 6 | 2 |
| 7 | 8 | 1 |
| 7 | 8 | 3 |
| 9 | 8 | 1 |
| 9 | 8 | 3 |

(a)

| A | B | C |
|---|---|---|
| 1 | 2 | 2 |
| 3 | 2 | 5 |
| 5 | 6 | 4 |
| 7 | 8 | 1 |
| 9 | 8 | 3 |

(b)

| A | B | C |
|---|---|---|
| 1 | 6 | 2 |
| 3 | 2 | 5 |
| 5 | 2 | 4 |
| 7 | 8 | 1 |
| 9 | 8 | 3 |

(c)

| A | B | C |
|---|---|---|
| 3 | 2 | 5 |
| 7 | 8 | 1 |
| 9 | 8 | 3 |

(d)

A. (a) B. (b) C. (c) D. (d)

ugcnetcse-dec2015-paper3 databases joins

Answer key

## 5.28 Object Oriented Database (2) top

### 5.28.1 Object Oriented Database: UGC NET CSE | December 2015 | Part 3 | Question: 58 top

Which of the following statements regarding the features of the object-oriented approach to databases are true?

a. The ability to develop more [illegible]

A. a, b, c, d and e B. a, b, c, d C. a, b, d, e D. a, c, d, e

ugcnetcse-dec2015-paper3 databases object-oriented-database

Answer key

### 5.28.2 Object Oriented Database: UGC NET CSE | June 2016 | Part 3 | Question: 7 top

Which of the following statements concerning Object-oriented database is false?

A. Objects in object-oriented databse contain not only data but also methods for processing the data
B. Object-oriented database store computational instructions in the same place as the data
C. Object-oriented database are mmore adapt at handling structured (analytical) data than relational databases
D. Object-oriented databases store more types of data than relational databases and access that data faster

ugcnetcse-june2016-paper3 databases object-oriented-database

## 5.29 Protocol (1) top

### 5.29.1 Protocol: UGC NET CSE | June 2014 | Part 3 | Question: 27, UGCNET-June2015-II: 17 top

Which of the following concurrency protocol ensues both conflict serializability and freedom from deadlock:

I. 2-phase locking
II. Time phase ordering

A. Both I & II B. II only C. I only D. Neither I nor II

ugcnetjune2014iii databases concurrency protocol ugcnetcse-june2015-paper2

Answer key

## 5.30 Rdbms (9) top

### 5.30.1 Rdbms: UGC NET CSE | July 2018 | Part 2 | Question: 61 top

In RDBMS, which type of Join returns all rows that satisfy the join condition?

A. Inner Join
B. Outer Join
C. Semi Join
D. Anti Join

ugcnetcse-july2018-paper2 databases rdbms joins

Answer key

## 5.30.2 Rdbms: UGC NET CSE | July 2018 | Part 2 | Question: 62 top

Consider a relation book (title, price) which contains the titles and prices of different books. Assuming that no two books have the same price, what does the following SQL query?

```
Select title
from book as B
where (select count(*)
   from book as T
   where T.price > B. price < 7
```

A. Titles of the six most expensive books
B. Title of the sixth most expensive books
C. Titles of the seven most expensive books
D. Title of the seventh most expensive books

ugcnetcse-july2018-paper2 databases rdbms sql

Answer key

## 5.30.3 Rdbms: UGC NET CSE | July 2018 | Part 2 | Question: 66 top

For a database relation $R(a, b, c, d)$ where the domains of a, b, c and d include only atomic values and only the following functional dependencies and those that can be inferred from them hold:

$a \rightarrow c$

$b \rightarrow d$

The relation is in ____

A. First normal form but not in second normal form
B. Second normal form but not in third normal form
C. Third normal form
D. BCNF

ugcnetcse-july2018-paper2 databases rdbms

Answer key

## 5.30.4 Rdbms: UGC NET CSE | July 2018 | Part 2 | Question: 67 top

A many-to-one relationship exists between entity sets $r_1$ and $r_2$. How will it be represented using functional dependencies if $Pk(r)$ denotes the primary key attribute of relation $r$?

A. $Pk(r_1) \rightarrow Pk(r_2)$
B. $Pk(r_2) \rightarrow Pk(r_1)$
C. $Pk(r_2) \rightarrow Pk(r_1)$ and $Pk(r_1) \rightarrow Pk(r_2)$
D. $Pk(r_2) \rightarrow Pk(r_1)$ or $Pk(r_1) \rightarrow Pk(r_2)$

ugcnetcse-july2018-paper2 databases rdbms

Answer key

## 5.30.5 Rdbms: UGC NET CSE | June 2013 | Part 3 | Question: 34 top

Horn clauses are special kinds of propositions which can be described as

A. Single atomic proposition on left side
B. Single or multiple atomic proposition on left side
C. A single atomic proposition on left side and a single atomic proposition on right side
D. A single atomic proposition on left side or an empty left side

ugcnetcse-june2013-paper3 databases rdbms

Answer key

## 5.30.6 Rdbms: UGC NET CSE | June 2013 | Part 3 | Question: 7 top

The “PROJECT” operator of a relational algebra creates a new table that has always

A. More columns than columns in original table
B. More rows than original table
C. Same number of rows as the original table
D. Same number of columns as the original table

ugcnetcse-june2013-paper3 databases rdbms

Answer key

### 5.30.7 Rdbms: UGC NET CSE | June 2016 | Part 2 | Question: 16 top

In RDBMS, the constraint that no key attribute (column) may be NULL is referred to as:

A. Referential integrity
B. Multi-valued dependency
C. Entity integrity
D. Functional dependency

ugcnetcse-june2016-paper2 databases rdbms sql

Answer key

### 5.30.8 Rdbms: UGC NET CSE | June 2016 | Part 2 | Question: 18 top

In a relational database model, NULL values canbe used for all but which one of the following?

A. To allow duplicate tuples in the table by filling the primary key column(s) with NULL
B. To avoid confusion with actual legitimate data values like 0 (zero) or integer columns and " (the empty string) for string columns
C. To leave columns in a tuple marked as "unknown" when the actual value is unknown
D. To fill a column in a tuple when that column does not really "exist" for that particular tuple

ugcnetcse-june2016-paper2 rdbms sql databases

Answer key

### 5.30.9 Rdbms: UGC NET CSE | November 2017 | Part 3 | Question: 10 top

Consider a relation $R(A, B, C, D, E, F, G, H)$ where each attribute is atomic, and following functional dependencies exist.

$CH \rightarrow G$
$A \rightarrow BC$
$B \rightarrow CFH$
$E \rightarrow A$
$F \rightarrow EG$

The relation $R$ is _____

A. In $1NF$ but not in $2NF$
B. In $2NF$ but not in $3NF$
C. In $3NF$ but not in $BCNF$
D. In $BCNF$

ugcnetcse-nov2017-paper3 databases rdbms database-normalization

Answer key

## 5.31 Recovery From Failure (1) top

### 5.31.1 Recovery From Failure: UGC NET CSE | December 2014 | Part 3 | Question: 09 top

_____ rules used to limit the volume of log information that has to be handled and processed in the event of system failure involving the loss of volatile information.

A. Write-ahead log
B. Check-pointing
C. Log buffer
D. Thomas

ugcnetcse-dec2014-paper3 databases transaction-and-concurrency recovery-from-failure

Answer key

## 5.32 Referential Integrity (2) top

### 5.32.1 Referential Integrity: UGC NET CSE | June 2019 | Part 2 | Question: 39 top

Following table has two attributes Employee_id and Manager_id, where Employee_id is a primary key and manager_id is a foreign key referencing Employee_id with on-delete cascade:

| Employee_id | Manager_id |
|---|---|
| 20 | 40 |
| 25 | 40 |
| 30 | 35 |
| 35 | 20 |
| 40 | 45 |
| 45 | 25 |

On deleting the table $(20, 40)$, the set of other tuples that must be deleted to maintain the referential integrity of table is

A. $(30, 35)$ only
B. $(30, 35)$ and $(35, 20)$ only
C. $(35, 20)$ only
D. $(40, 45)$ and $(25, 40)$ only

ugcnetcse-june2019-paper2 referential-integrity

Answer key

### 5.32.2 Referential Integrity: UGC NET CSE | September 2013 | Part 3 | Question: 24 top

_____ constraints ensure that a value that appears in one relation for a given set of attributes also appears for a certain set of attributes in another relation.

A. Logical Integrity
B. Referential Integrity
C. Domain Integrity
D. Data Integrity

ugcnetcse-sep2013-paper3 databases referential-integrity

Answer key

## 5.33 Relation (2) top

### 5.33.1 Relation: UGC NET CSE | July 2018 | Part 2 | Question: 69 top

Let $R_1(a, b, c)$ and $R_2(x, y, z)$ be two relations in which a is the foreign key of $R_1$ that refers to the primary key of $R_2$. Consider the following four options.

a. Insert into $R_1$
b. Insert into $R_2$
c. Delete from $R_1$
d. Delete from $R_2$

Which of the following is correct about the referential integrity constraint with respect to above?

A. Operations a and b will cause violation
B. Operations b and c will cause violation
C. Operations c and d will cause violation
D. Operations d and a will cause violation

ugcnetcse-july2018-paper2 databases relation

Answer key

### 5.33.2 Relation: UGC NET CSE | September 2013 | Part 3 | Question: 48 top

Match the following :

| | | | |
|---|---|---|---|
| (a) | Create | (i) | The ER model |
| (b) | Select | (ii) | Relationship model |
| (c) | Rectangle | (iii) | DDL |
| (d) | Record | (iv) | DML |

**Codes :**

A. (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)
B. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)
C. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)
D. (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)

ugcnetcse-sep2013-paper3 databases er-diagram relation

Answer key

## 5.34 Relational Algebra (4) top

### 5.34.1 Relational Algebra: UGC NET CSE | December 2013 | Part 3 | Question: 56 top

Consider the following schemas:

Branch=(Branch-name, Assets, Branch-city)

Customer = (Customer-name, Bank name, Customer-city)

Borrow = (Branch-name, Loan number, Customer account-number)

Deposit = (Branch-name, Account-number, Customer-name, Balance)

Using relational Algebra, the Query that finds customers who have balance more than 10,000 is _____

A. $\pi_{customer-name}\left(\sigma_{balance>10000}{}^{(Deposit)}\right)$
B. $\sigma_{customer-name}\left(\sigma_{balance>10000}{}^{(Deposit)}\right)$
C. $\pi_{customer-name}\left(\sigma_{balance>10000}{}^{(Borrow)}\right)$
D. $\sigma_{customer-name}\left(\pi_{balance>10000}{}^{(Borrow)}\right)$

ugcnetcse-dec2013-paper3 databases relational-algebra

Answer key

### 5.34.2 Relational Algebra: UGC NET CSE | January 2017 | Part 3 | Question: 9 top

Let $pk(R)$ denotes primary key of relation $R$. A many-to-one relationship that exists between two relations $R_1$ and $R_2$ can be expressed as follows:

A. $pk(R_2) \rightarrow pk(R_1)$
B. $pk(R_1) \rightarrow pk(R_2)$
C. $pk(R_2) \rightarrow R_1 \cap R_2$
D. $pk(R_1) \rightarrow R_1 \cap R_2$

ugcnetcse-jan2017-paper3 databases relational-algebra

Answer key

### 5.34.3 Relational Algebra: UGC NET CSE | June 2016 | Part 3 | Question: 9 top

Consider the relations $R(A, B)$ and $S(B, C)$ and the following four relational algebra queries over R ans S

I. $\pi_{A,B}(R \bowtie S)$
II. $R \bowtie \pi_B(S)$
III. $R \cap (\pi_A(R) \times \pi_B(S))$
IV. $\Pi_{A.R.B}(R \times S)$ where $R.B$ refers to the column B in table R

One can determine that:

A. I, III and IV are the same query
B. II, III and IV are the same query
C. I, II and IV are the same query
D. I, II and III are the same query

ugcnetcse-june2016-paper3 databases relational-algebra

Answer key

### 5.34.4 Relational Algebra: UGC NET CSE | June 2019 | Part 2 | Question: 33 top

With respect to relational algebra, which of the following operations are included from mathematical set theory?

a. Join
b. Intersection
c. Cartisian product
d. Project

A. a and b
B. b and c
C. c and d
D. a and d

ugcnetcse-june2019-paper2 relational-algebra

Answer key

## 5.35 Relational Calculus (2) top

### 5.35.1 Relational Calculus: UGC NET CSE | June 2019 | Part 2 | Question: 31 top

Which of the following has same expressive power with regard to relational query language?

a. Rational algebra and b. Relational algebra and c. Relational algebra and d. Relational algebra and

A. a and b only B. c and d only C. a and c only D. b and d only

ugcnetcse-june2019-paper2 relational-calculus

Answer key

### 5.35.2 Relational Calculus: UGC NET CSE | September 2013 | Part 3 | Question: 47 top

Consider the following schemas:

Branch_Schema = (branch_name, assets, city)

Customer_Schema = (customer_name, street, city)

Deposit_Schema = (branch_name, account_number, customer_name, balance)

Borrow_Schema = (branch_name, loan_number, customer_name, amount)

Which of the following tuple relational calculus finds all customers who have loan amount more than Rs. 12, 0000?

A. {t(customer_name) | t ∈ borrow[?] t[amount] > 12000 }
B. {t | t(customer_name) | t ∈ borrow[?] t[amount] > 12000 }
C. { t | [?] ∈ borrow (t(customer_name)=s(customer_name))[?][amount]>12000}
D. { t | [?] ∈ borrow(t(customer_name)[?] s[amount] > 12000}

ugcnetcse-sep2013-paper3 databases relational-calculus

## 5.36 Relational Model (2) top

### 5.36.1 Relational Model: UGC NET CSE | June 2019 | Part 2 | Question: 32 top

Which of the following features is supported in the rational database model?

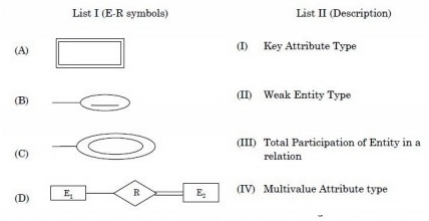
A. Complex data-types
B. Multivalued attributes
C. Associations with multiplicities
D. Generalization relationships

ugcnetcse-june2019-paper2 relational-model

Answer key

### 5.36.2 Relational Model: UGC NET CSE | October 2020 | Part 2 | Question: 67 top

Match $\text{List I}$ with $\text{List II}$




Choose the correct answer from the options given below:

A. $A-II, B-IV, C-III, D-I$
B. $A-IV, B-I, C-II, D-III$
C. $A-II, B-I, C-IV, D-III$
D. $A-III, B-IV, C-I, D-II$

ugcnetcse-oct2020-paper2 databases relational-model

Answer key

## 5.37 Relational Schema (1) top

### 5.37.1 Relational Schema: UGC NET CSE | November 2017 | Part 3 | Question: 12 top

Consider a schema $R(A, B, C, D)$ and following functional dependencies.

- $A \rightarrow B$
- $B \rightarrow C$

- $C \rightarrow D$
- $D \rightarrow B$

Then decomposition of $R$ into $R1(A, B)$, $R2(B, C)$ and $R3(B, D)$ is _____

A. Dependency preserving and lossless join
B. Lossless join but dependency preserving
C. Dependency preserving but not lossless join
D. Not dependency preserving and not lossless join

ugcnetcse-nov2017-paper3 databases relational-schema rdbms

Answer key

## 5.38 Relations (1) top

### 5.38.1 Relations: UGC NET CSE | September 2013 | Part 3 | Question: 49 top

Match the following:

a. i. One to One Relationship

b. ii. Relationship

c. iii. Many to Many Relationship

d. iv. Many to One Relationship

A. a-iii, b-iv, c-ii, d-i
B. a-iv, b-iii, c-ii, d-i
C. a-ii, b-iii, c-iv, d-i
D. a-iii, b-iv, c-i, d-ii

ugcnetcse-sep2013-paper3 databases relations

Answer key

## 5.39 Sql (34) top

### 5.39.1 Sql: UGC NET CSE | August 2016 | Part 2 | Question: 20 top

Consider a database table $R$ with attributes $A$ and $B$. Which of the following $SQL$ queries is illegal ?

A. SELECT A FROM R;
B. SELECT A, COUNT(*) FROM R;
C. SELECT A, COUNT(*) FROM R GROUP BY A;
D. SELECT A, B, COUNT(*) FROM R GROUP BY A, B;

ugcnetcse-aug2016-paper2 databases sql

Answer key

### 5.39.2 Sql: UGC NET CSE | August 2016 | Part 3 | Question: 11 top

Consider the following ORACLE relations : One $(x, y) = , , , , ,$ Two $(x, y) = , , , , , , ,$ Consider the following two $SQL$ queries $SQ1$ and $SQ2$ :

SQ1 :

```
SELECT * FROM One)
      EXCEPT
(SELECT * FROM Two);
```

SQ2 :

```
SELECT * FROM One)
    EXCEPT ALL
(SELECT * FROM Two);
```

For each of the SQL queries, what is the cardinality (number of rows) of the result obtained when applied to the instances above ?

A. 2 and 1 respectively
B. 1 and 2 respectively
C. 2 and 2 respectively
D. 1 and 1 respectively

ugcnetcse-aug2016-paper3 databases sql

Answer key

### 5.39.3 Sql: UGC NET CSE | December 2011 | Part 2 | Question: 21 top

What deletes the entire file except the file structure ?

A. ERASE B. DELETE C. ZAP D. PACK

ugcnetcse-dec2011-paper2 databases sql

Answer key

### 5.39.4 Sql: UGC NET CSE | December 2011 | Part 2 | Question: 22 top

Which command classes text file, which has been created using "SET ALTERNATIVE" "Command" ?

A. SET ALTERNATE OFF
B. CLOSE DATABASE
C. CLOSE ALTERNATE
D. CLEAR ALL

ugcnetcse-dec2011-paper2 databases sql

### 5.39.5 Sql: UGC NET CSE | December 2011 | Part 2 | Question: 24 top

Which of the following statements is true, when structure of database file with 20 records is modified ?

A. ? EOF ( ) Prints. T
B. ? BOF ( ) Prints F
C. ? BOF ( ) Prints T
D. ? EOF ( ) Prints F

ugcnetcse-dec2011-paper2 databases sql

Answer key

### 5.39.6 Sql: UGC NET CSE | December 2011 | Part 2 | Question: 25 top

The $SQL$ Expression Select distinct $T$. branch name from branch $T$, branch $S$ where $T$. assets $> S$. assets and $S$. branch-city = DELHI, finds the name of

A. All branches that have greater asset than any branch located in DELHI.
B. All branches that have greater assets than allocated in DELHI.
C. The branch that has the greatest asset in DELHI.
D. Any branch that has greater asset than any branch located in DELHI.

ugcnetcse-dec2011-paper2 databases sql

Answer key

### 5.39.7 Sql: UGC NET CSE | December 2012 | Part 2 | Question: 50 top

Given a Relation POSITION (Posting-No, Skill), then the query to retrieve all distinct pairs of posting-nos. requiring skill is

A. Select p.posting-No, p.posting-No from position p where p.skill=p.skill and p.posting-No < p.posting-No
B. Select $p_1$.posting-No, $p_2$.posting-No from position $p_1$, position $p_2$ where $p_1$.skill=$p_2$.skill
C. Select $p_1$.posting-No, $p_2$.posting-No from position $p_1$, position $p_2$ where $p_1$.skill=$p_2$.skill and $p_1$.posting.No < $p_2$.posting-No
D. Select $p_1$.posting-No, $p_2$.posting-No from position $p_1$, position $p_2$ where $p_1$.skill=$p_2$.skill and $p_1$.posting.No = $p_2$.posting-No

ugcnetcse-dec2012-paper2 databases sql

Answer key

### 5.39.8 Sql: UGC NET CSE | December 2012 | Part 3 | Question: 70 top

Referential integrity is directly related to

A. Relation key B. Foreign key C. Primary key D. Candidate key

ugcnetcse-dec2012-paper3 databases sql

Answer key

## 5.39.9 Sql: UGC NET CSE | December 2013 | Part 3 | Question: 58 top

Consider the table student (stuid, name, course, marks). Which one of the following two queries is correct to find the highest marks student in course 5?

Q.1. Select S.stuid from student S where not exist (select * from student e where e course ='5' and e marks $\geq$ s marks)

Q.2. select s.stu.id From student S where s.marks > any (select distinct marks from student S where s.course =5)

A. Q.1 B. Q.2 C. Both Q.1 and Q.2 D. Neither Q.1 nor Q.2

ugcnetcse-dec2013-paper3 databases sql

Answer key

## 5.39.10 Sql: UGC NET CSE | December 2014 | Part 2 | Question: 16 top

Division operation is ideally suited to handle queries of the type :

A. Customers who have no account in any of the branches in Delhi.
B. Customers who have an account at all branches in Delhi.
C. Customers who have an account in atleast one branch in Delhi.
D. Customers who have only joint account in any one branch in Delhi

ugcnetcse-dec2014-paper2 databases sql

Answer key

## 5.39.11 Sql: UGC NET CSE | December 2014 | Part 2 | Question: 17 top

Which of the following is true ?

I. Implementation of self-join is possible in SQL with table alias.

II. Outer-join operation is basic operation in relational algebra.

III. Natural join and outer join operations are equivalent.

A. $I$ and $II$ are correct.
B. $II$ and $III$ are correct.
C. Only $III$ is correct.
D. Only $I$ is correct.

ugcnetcse-dec2014-paper2 databases sql

Answer key

## 5.39.12 Sql: UGC NET CSE | December 2015 | Part 2 | Question: 13 top

Consider a "CUSTOMERS" database table having a column "CITY" filled with all the names of Indian cities (in capital letters). The SQL statement that finds all cities that have "GAR" somewhere in its name, is:

A. select * from customers where city='%GAR%';

B. select * from customers where city='$GAR$';

C. select * from customers where city like '%GAR%';

D. select * from customers where city as'%GAR';

ugcnetcse-dec2015-paper2 databases sql

Answer key

## 5.39.13 Sql: UGC NET CSE | December 2015 | Part 3 | Question: 59 top

Consider the following database table:

```
Create table test(
   one integer,
   two integer,
```

```
primary key(one),
unique(two),
check(one>=1 and <=10),
check (two>=1 and <=5)
);
```

How many data records/tuples atmost can this table contain?

A. $5$ B. $10$ C. $15$ D. $50$

ugcnetcse-dec2015-paper3 databases sql

Answer key

## 5.39.14 Sql: UGC NET CSE | December 2015 | Part 3 | Question: 60 top

Suppose ORACLE relation $R(A, B)$ currently has tuples $\{(1,2),(1,3),(3,4)\}$ and relation $S(B, C)$ currently has $\{(2,5),(4,6),(7,8)\}$.Consider the following two SQL queries SQ1 and SQ2:

```
SQ1:  Select * From R Full Join S On R.B=S.B;
SQ2:  Select * From R Inner Join S On R.B=S.B;
```

The numbers of tuples in the result of the SQL query SQ1 and the SQL query SQ2 are given by:

A. $2$ and $6$ respectively
B. $6$ and $2$ respectively
C. $2$ and $4$ respectively
D. $4$ and $2$ respectively

ugcnetcse-dec2015-paper3 databases sql

Answer key

## 5.39.15 Sql: UGC NET CSE | December 2015 | Part 3 | Question: 61 top

Consider the following three SQL queries (Assume the data in the people table):

a. Select Name from people where Age > 21;
b. Select Name from people where Height > 180;
c. Select Name from people where (Age > 21) or (Height > 180);

If the SQL queries $a$ and $b$ above return $10$ rows and $7$ rows in the result set respectively, then what is one possible number of rows returned by the SQL query $c$?

A. $3$ B. $7$ C. $10$ D. $21$

ugcnetcse-dec2015-paper3 databases sql

Answer key

## 5.39.16 Sql: UGC NET CSE | December 2019 | Part 2 | Question: 22 top

Given two tables

```
EMPLOYEE (EID, ENAME, DEPTNO)
DEPARTMENT (DEPTNO, DEPTNAME)
```

Find the most appropriate statement of the given query:

```
Select count (*) 'total'
from EMPLOYEE
where DEPTNO IN (D1,D2)
group by DEPTNO
having count (*) >5
```

A. Total number of employees in each department $D1$ and $D2$
B. Total number of employees of department $D1$ and $D2$ if their total is $> 5$
C. Display total number of employees in both departments $D1$ and $D2$
D. The output of the query must have at least two rows

ugcnetcse-dec2019-paper2 sql

Answer key

## 5.39.17 Sql: UGC NET CSE | January 2017 | Part 2 | Question: 17 top

Integrity constraints ensure that changes made to the database by authorized users do not result into loss of data consistency. Which of the following statement(s) is (are) true w.r.t.the examples of integrity constraints?

a. An instructor Id. No. cannot be null, provided Instructor bldNo two citizens have same Adhar-Id. No. being primary key.
c. Budget of a company must be zero.

A. a, b and c are true.
B. a false, b and c are true.
C. a and b are true; c false.
D. a,b and c are false.

ugcnetjan2017ii databases sql

Answer key

## 5.39.18 Sql: UGC NET CSE | January 2017 | Part 3 | Question: 11 top

Consider the following relation:

```
Works(emp_name, company_name,salary)
```

Here,emp name is primary key.

Consider the following SQL query

```
Select emp name
From works T
where salary > (select avg(salary)
        from works S
        where  T. company name =
            S. company name)
```

The above query is for following:

A. Find the highest paid employee who earns more than the average salary of all employees of his company.
B. Find the highest paid employee who earns more than the average salary of all the employees of all the companies.
C. Find all employees who earn more than the average salary of all employees all the companies.
D. Find all employees who earn more than the average salary of all employees of their company.

ugcnetcse-jan2017-paper3 databases sql

Answer key

## 5.39.19 Sql: UGC NET CSE | June 2010 | Part 2 | Question: 19 top

Which data management language component enabled the DBA to define the schema components ?

A. DML
B. Sub-schema DLL
C. Schema DLL
D. All of these

ugcnetcse-june2010-paper2 databases sql

Answer key

## 5.39.20 Sql: UGC NET CSE | June 2010 | Part 2 | Question: 20 top

The PROJECT Command will create new table that has

A. More fields than the original table
B. More rows than original table
C. Both (A) & (B)
D. None of these

ugcnetcse-june2010-paper2 databases sql

Answer key

## 5.39.21 Sql: UGC NET CSE | June 2013 | Part 3 | Question: 8 top

The employee information of an organization is stored in a relation: Employee (name, sex, salary, deptname). Consider the following SQL query:

```
Select deptname from Employee where sex='M' group by dept name having
avg (salary) > {select avg (salary) from Employee}
```

Output of the given query corresponds to

A. Average salary of employee more than average salary of the organization
B. Average salary of employee less than average salary of the organization
C. Average salary of employee equal to average salary of the organization
D. Average salary of male employees in a department is more than average salary of the organization

ugcnetcse-june2013-paper3 databases sql

Answer key

## 5.39.22 Sql: UGC NET CSE | June 2016 | Part 2 | Question: 19 top

Consider the following two comments C1 and C2 on the relation R from an SQL database:

C1 : drop table R;

C2 : delete from R

I. Both C1 and C2 delete the schema R
II. C2 retains relation R, but delets all tuples in R
III. C1 deletes not only all tuples, but also the schema for R

A. I only B. I and II only C. II and III only D. I, II and III only

ugcnetcse-june2016-paper2 databases sql

Answer key

## 5.39.23 Sql: UGC NET CSE | June 2016 | Part 3 | Question: 11 top

Consider the following ORACLE relations:

R(A, B, C)={<1, 2, 3>, <1, 2, 0>, <1, 3, 1>, <6, 2, 3>, <1, 4, 2>, <3, 1, 4>}

S(B, C, D)={<2, 3, 7>, <1, 4, 5>, <1, 2, 3>, <2, 3, 4>, <3, 1, 4>}

Consider teh following two SQL queries:

$SQ_1$; SELECT R.B, AVG(S.B) FROM R, S WHERE R.A=S.C AND S.D<7 GROUP BY R.B

$SQ_2$: SELECT DISTINCT S.B, MIN(S-C) FROM S GROUP BY S.B HAVING COUNT (DISTINCT S.D)>1;

If M is the number of tuples returned by $SQ_1$ and If N is the number of tuples returned by $SQ_2$ then

A. M=4, N=2 B. M=5, N=3 C. M=2, N=2 D. M=3, N=3

ugcnetcse-june2016-paper3 databases sql

Answer key

## 5.39.24 Sql: UGC NET CSE | June 2019 | Part 2 | Question: 37 top

Which of the following statements are DML statements?

a. Update [tablename] Set [columnname]=VALUE
b. Delete [tablename]
c. Select * from [tablename]

A. a and b B. a and d C. a, b and c D. b and c

ugcnetcse-june2019-paper2 sql

Answer key

## 5.39.25 Sql: UGC NET CSE | Junet 2015 | Part 2 | Question: 16 top

An Assertion is predicate expressing a condition we wish database to always satisfy. The correct syntax for Assertion is:

A. CREATE ASSERTION 'ASSERTION Name' CHECK 'Predicate'
B. CREATE ASSERTION 'ASSERTION Name'
C. CREATE ASSERTION, CHECK 'Predicate'
D. SELECT ASSERTION

ugcnetcse-june2015-paper2 databases sql

Answer key

## 5.39.26 Sql: UGC NET CSE | Junet 2015 | Part 2 | Question: 18 top

Drop Table cannot be used to drop a Table referenced by _____ constraint

a. Primary key b. Sub key c. Super key d. Foreign key

A. a B. a, b and c C. d D. a and d

ugcnetcse-june2015-paper2 databases sql

Answer key

## 5.39.27 Sql: UGC NET CSE | Junet 2015 | Part 3 | Question: 8 top

The STUDENT information in a university stored in the relation STUDENT (Name, SEX, Marks, DEPT_Name). COnsider the following SQL Query:

```
SELECT DEPT_Name from STUDENT where SEX='M'
group by DEPT_Name having avg(Marks)>SELECT avg(Marks) from STUDENT
```

It returns the name of the department for which

A. The average marks of Male students is more than the average marks of students in the department
B. The average marks of Male students is more than the average marks of students in the university
C. The average marks of students is more than the average marks of male students in the university
D. The average marks of Male students is more than the average marks of male students in the university

ugcnetcse-june2015-paper3 sql databases

Answer key

## 5.39.28 Sql: UGC NET CSE | November 2017 | Part 3 | Question: 11 top

Given two relations $R_1(A, B)$ and $R_2(C, D)$, the result of following query

```
Select distinct A, B
From R1, R2
```

Is guaranteed to be same as $R_1$ provided one of the following condition is satisfied.

A. $R_1$ has no duplicates and $R_2$ is empty.
B. $R_1$ has no duplicates and $R_2$ is non-empty.
C. Both $R_1$ and $R_2$ have no duplicates.
D. $R_2$ has no duplicates and $R_1$ is non – empty.

ugcnetcse-nov2017-paper3 databases sql

Answer key

## 5.39.29 Sql: UGC NET CSE | October 2020 | Part 2 | Question: 100 top

Consider the following table structures related to a university for the below question.

**EMPLOYEE**

```
   NAME VARCHAR (30) NOT NULL,
   EID VARCHAR (10) NOT NULL,
   DEPTNO INT (5) NOT NULL,
   HODEID VARCHAR (10),
   SALARY INT (10),
PRIMARY KEY (EID),
FOREIGN KEY (HODEID) REFERENCES EMPLOYEE (EID),
FOREIGN KEY (DEPTNO) REFERENCES DEPARTMENT (DID);
```

**DEPARTMENT**

```
   DID INT (5) NOT NULL,
   DNAME VARCHAR(30) NOT NULL,
   HODID VARCHAR (10) NOT NULL,
   HODNAME VARCHAR (30),
PRIMARY KEY (DID),
```

UNIQUE (DNAME),
FOREIGN KEY (HODID) REFERENCES EMPLOYEE (EID)

**PROJECT WORK:**

EMPID VARCHAR (10) NOTNULL,
PROJNO INT(5) NOT NULL,
PROJECTLOC VARCHAR (30) NOT NULL,
PRIMARY KEY (EMPID, PROJNO),
FOREIGN KEY (EMPID) REFERENCES EMPLOYEE (EID),

Refer table, structures given above, University decided to give all employees in the 'SCIENCE' department a $20\%$ rise in salary. Which of the following query/queries will compute the above results?

| a. | b. | c. | |
|---|---|---|---|
| UP[illegible] | [illegible] | [illegible] | [illegible] |

Choose the correct answer from the options given below:

A. $a$ and $b$ only B. $a$ only C. $b$ and $c$ only D. $c$ only

ugcnetcse-oct2020-paper2 databases sql

Answer key

## 5.39.30 Sql: UGC NET CSE | October 2020 | Part 2 | Question: 96 top

Consider the following table structures related to a university for the below question.

**EMPLOYEE**

```
NAME VARCHAR (30) NOT NULL,
EID VARCHAR (10) NOT NULL,
DEPTNO INT (5) NOT NULL,
HODEID VARCHAR (10),
SALARY INT (10),
PRIMARY KEY (EID),
FOREIGN KEY (HODEID) REFERENCES EMPLOYEE (EID),
FOREIGN KEY (DEPTNO) REFERENCES DEPARTMENT (DID);
```

**DEPARTMENT**

```
DID INT (5) NOT NULL,
DNAME VARCHAR(30) NOT NULL,
HODID VARCHAR (10) NOT NULL,
HODNAME VARCHAR (30),
PRIMARY KEY (DID),
UNIQUE (DNAME),
FOREIGN KEY (HODID) REFERENCES EMPLOYEE (EID)
```

**PROJECT WORK:**

```
EMPID VARCHAR (10) NOTNULL,
PROJNO INT(5) NOT NULL,
PROJECTLOC VARCHAR (30) NOT NULL,
PRIMARY KEY (EMPID, PROJNO),
FOREIGN KEY (EMPID) REFERENCES EMPLOYEE (EID),
```

On the basis of above given table structures, retrieve the distinct employee ID (EMPID) of all employees of university who are working on project. No. $20, 30$ and $40$

A.
```
SELECT EMPID FROM PROJECTWORK WHERE PROJNO=(20,30,40);
```

B.
```
SELECT EMPID FROM PROJECTWORK WHERE PROJNO IN (20,30,40);
```

C.
```
SELECT DISTINCT EMPID FROM PROJECTWORK WHERE PROJNO IN(20,30,40);
```

D.
```
SELECT DISTINCT EMPID FROM PROJECTWORK WHERE PROJNO=20,30,40;
```

ugcnetcse-oct2020-paper2 databases sql

Answer key

## 5.39.31 Sql: UGC NET CSE | October 2020 | Part 2 | Question: 97 top

Consider the following table structures related to a university for the below question.

**EMPLOYEE**

NAME VARCHAR (30) NOT NULL,
EID VARCHAR (10) NOT NULL,
DEPTNO INT (5) NOT NULL,
HODEID VARCHAR (10),
SALARY INT (10),
PRIMARY KEY (EID),
FOREIGN KEY (HODEID) REFERENCES EMPLOYEE (EID),
FOREIGN KEY (DEPTNO) REFERENCES DEPARTMENT (DID);

**DEPARTMENT**

DID INT (5) NOT NULL,
DNAME VARCHAR(30) NOT NULL,
HODID VARCHAR (10) NOT NULL,
HODNAME VARCHAR (30),
PRIMARY KEY (DID),
UNIQUE (DNAME),
FOREIGN KEY (HODID) REFERENCES EMPLOYEE (EID)

**PROJECT WORK:**

EMPID VARCHAR (10) NOTNULL,
PROJNO INT(5) NOT NULL,
PROJECTLOC VARCHAR (30) NOT NULL,
PRIMARY KEY (EMPID, PROJNO),
FOREIGN KEY (EMPID) REFERENCES EMPLOYEE (EID),

Given below are two statements to find the sum of salaries of all employees of the English department as well as the maximum, minimum and average salary in English department

STATEMENT $I$:

```
SELECT SUM (SALARY) MAX(SALARY) MIN(SALARY),
AVG (SALARY) FROM EMPLOYEE, DEPARTMENT
WHERE DEPTNO=DID AND DNAME='ENGLISH'
```

STATEMENT $II$:

```
SELECT SUM (SALARY), MAX(SALARY), MIN (SALARY),
AVG (SALARY), FROM EMPLOYEE, DEPARTMENT
WHERE DNAME='ENGLISH'
```

In the light of the above statements, choose the correct answer from the options given below:

A. Both Statement $I$ and Statement $II$ are true
B. Both Statement $I$ and Statement $II$ are false
C. Statement $I$ is correct but Statement $II$ is false
D. Statement $I$ is incorrect but Statement $II$ is true

ugcnetcse-oct2020-paper2 databases sql

Answer key

## 5.39.32 Sql: UGC NET CSE | October 2020 | Part 2 | Question: 98 top

Consider the following table structures related to a university for the below question.

**EMPLOYEE**

```
   NAME VARCHAR (30) NOT NULL,
   EID VARCHAR (10) NOT NULL,
   DEPTNO INT (5) NOT NULL,
   HODEID VARCHAR (10),
   SALARY INT (10),
PRIMARY KEY (EID),
FOREIGN KEY (HODEID) REFERENCES EMPLOYEE (EID),
FOREIGN KEY (DEPTNO) REFERENCES DEPARTMENT (DID);
```

**DEPARTMENT**

```
   DID INT (5) NOT NULL,
   DNAME VARCHAR(30) NOT NULL,
   HODID VARCHAR (10) NOT NULL,
   HODNAME VARCHAR (30),
PRIMARY KEY (DID),
UNIQUE (DNAME),
FOREIGN KEY (HODID) REFERENCES EMPLOYEE (EID)
```

**PROJECT WORK:**

```
   EMPID VARCHAR (10) NOTNULL,
   PROJNO INT(5) NOT NULL,
   PROJECTLOC VARCHAR (30) NOT NULL,
PRIMARY KEY (EMPID, PROJNO),
FOREIGN KEY (EMPID) REFERENCES EMPLOYEE (EID),
```

Which of the following query/queries return the employee ID and name of employees whose salary is greater than the salary of all employees in department number $20$ of university. Order result by employee ID (refer table structures given above).

a. [illegible]

b. [illegible]

c. SELECT SALARY FROM EMPLOYEE WHERE DEPTNO=20);

Choose the correct answer from the options below

A. $a$ and $b$ only

B. $a$ and $c$ only

C. $b$ only

D. $c$ only

ugcnetcse-oct2020-paper2 databases sql

Answer key

## 5.39.33 Sql: UGC NET CSE | October 2020 | Part 2 | Question: 99 top

Consider the following table structures related to a university for the below question.

**EMPLOYEE**

```
   NAME VARCHAR (30) NOT NULL,
   EID VARCHAR (10) NOT NULL,
   DEPTNO INT (5) NOT NULL,
   HODEID VARCHAR (10),
   SALARY INT (10),
PRIMARY KEY (EID),
FOREIGN KEY (HODEID) REFERENCES EMPLOYEE (EID),
FOREIGN KEY (DEPTNO) REFERENCES DEPARTMENT (DID);
```

**DEPARTMENT**

```
   DID INT (5) NOT NULL,
   DNAME VARCHAR(30) NOT NULL,
   HODID VARCHAR (10) NOT NULL,
```

HODNAME VARCHAR (30),
PRIMARY KEY (DID),
UNIQUE (DNAME),
FOREIGN KEY (HODID) REFERENCES EMPLOYEE (EID)

**PROJECT WORK:**

EMPID VARCHAR (10) NOTNULL,
PROJNO INT(5) NOT NULL,
PROJECTLOC VARCHAR (30) NOT NULL,
PRIMARY KEY (EMPID, PROJNO),
FOREIGN KEY (EMPID) REFERENCES EMPLOYEE (EID),

In reference to the above given table structures, which of the following query/queries will drop the 'SALARY' column from 'EMPLOYEE' table?

| a. | b. | c. |
|---|---|---|
| ALTER TABLE EMPLOYEE DROP SALARY | ALTER TABLE EMPLOYEE DROP COLUMN SALARY | ALTER TABLE EMPLOYEE DROP SALARY RESTRICT |

Choose the correct answer from the options given below:

A. $a$ and $b$ only B. $a$ and $c$ only C. $b$ and $c$ only D. $a$ only

ugcnetcse-oct2020-paper2 databases sql

Answer key

### 5.39.34 Sql: UGC NET CSE | September 2013 | Part 3 | Question: 25 top

The SQL expression

```
Select distinct T.branch_name from branch T, branch S
where T.assets>S.assets and S.branch_city = "Mumbai"
```

finds the names of

A. All branches that have greater assets than some branch located in Mumbai
B. All branches that have greater assets than all branches in Mumbai
C. The branch that has greatest asset in Mumbai
D. Any branch that has greater assets than any branch in Mumbai

ugcnetcse-sep2013-paper3 databases sql

Answer key

## 5.40 Transaction And Concurrency (9) top

### 5.40.1 Transaction And Concurrency: UGC NET CSE | December 2010 | Part 2 | Question: 18 top

Which of the following is an optimistic concurrency control method ?

A. Validation based
B. Time stamp ordering
C. Lock-based
D. None of these

ugcnetcse-dec2010-paper2 databases transaction-and-concurrency

Answer key

### 5.40.2 Transaction And Concurrency: UGC NET CSE | December 2014 | Part 3 | Question: 08 top

Which of the following is correct ?

I. Two phase locking is an optimistic protocol.

II. Two phase locking is pessimistic protocol

III. Time stamping is an optimistic protocol.

IV. Time stamping is pessimistic protocol.

A. $I$ and $III$ B. $II$ and $IV$ C. $I$ and $IV$ D. $II$ and $III$

ugcnetcse-dec2014-paper3 databases transaction-and-concurrency

Answer key

### 5.40.3 Transaction And Concurrency: UGC NET CSE | January 2017 | Part 3 | Question: 7 top

Consider following schedules involving two transactions:

$S_1 : r_1(X); r_1(Y); r_2(X); r_2(Y); w_2(Y); w_1(X)$

$S_2 : r_1(X); r_2(X); r_2(Y); w_2(Y); r_1(Y); w_1(X)$

Which of the following statement is true?

A. Both $S_1$ and $S_2$ are conflict serializable.
B. $S_1$ is conflict serializable and $S_2$ is not conflict serializable
C. $S_1$ is not conflict serializable and $S_2$ is conflict serializable
D. Both $S_1$ and $S_2$ are not conflict serializable

ugcnetcse-jan2017-paper3 databases transaction-and-concurrency

Answer key

### 5.40.4 Transaction And Concurrency: UGC NET CSE | July 2018 | Part 2 | Question: 65 top

Consider the following schedules involving two transactions.

$S_1 : r_1(X); r_1(Y); r_2(X); r_2(Y); w_2(Y); w_1(X)$

$S_2 : r_1(X); r_2(X); r_2(Y); w_2(Y); r_1(Y); w_1(X)$

Which one of the following statements is correct with respect to above?

A. Both $S_1$ and $S_2$ are conflict serializable
B. Both $S_1$ and $S_2$ are not conflict serializable
C. $S_1$ is conflict serializable and $S_2$ is not conflict serializable
D. $S_1$ is not conflict serializable and $S_2$ is conflict serializable

ugcnetcse-july2018-paper2 databases transaction-and-concurrency

Answer key

### 5.40.5 Transaction And Concurrency: UGC NET CSE | June 2012 | Part 2 | Question: 12 top

A Transaction Manager is which of the following?

A. Maintains a log of transactions
B. Maintains before and after database images
C. Maintains appropriate concurrent control
D. All of the above

ugcnetcse-june2012-paper2 databases transaction-and-concurrency

Answer key

### 5.40.6 Transaction And Concurrency: UGC NET CSE | November 2017 | Part 3 | Question: 7 top

Consider the following four schedules due to three transactions (indicated by the subscript) using read and write on a data item $X$, denoted by $r(X)$ and $w(X)$ respectively. Which one of them is conflict serializable?

$S1: r1(X); r2(X); w1(X); r3(X); w2(X)$

$S2: r2(X); r1(X); w2(X); r3(X); w1(X)$

$S3: r3(X); r2(X); r1(X); w2(X); w1(X)$

$S4: r2(X); w2(X); r3(X); r1(X); w1(X)$

A. $S1$
B. $S2$
C. $S3$
D. $S4$

ugcnetcse-nov2017-paper3 databases transaction-and-concurrency

Answer key

### 5.40.7 Transaction And Concurrency: UGC NET CSE | November 2017 | Part 3 | Question: 8 top

Suppose a database schedule S involves transactions $T1, T2, \ldots, Tn$. Consider the precedence graph of $S$ with vertices representing the transactions and edges representing the conflicts. If $S$ is serializable, which one of the following orderings of the vertices of the precedence graph is guaranteed to yield a serial schedule?

A. Topological order
B. Depth – first order
C. Breadth – first order
D. Ascending order of transactions indices

ugcnetcse-nov2017-paper3 databases transaction-and-concurrency

Answer key

### 5.40.8 Transaction And Concurrency: UGC NET CSE | September 2013 | Part 2 | Question: 37 top

Usage of Preemption and Transaction Rollback prevents _____.

A. Unauthorized usage of data file
B. Deadlock situation
C. Data manipulation
D. File pre-emption

ugcnetsep2013ii databases transaction-and-concurrency

Answer key

### 5.40.9 Transaction And Concurrency: UGC NET CSE | September 2013 | Part 2 | Question: 43 top

Thoma's-write rule is

A. Two phase locking protocol
B. Timestamp ordering protocol
C. One phase locking protocol
D. Sliding window protocol

ugcnetsep2013ii databases transaction-and-concurrency

Answer key

## 5.41 Transactions And Concurrency Control (1) top

### 5.41.1 Transactions And Concurrency Control: UGC NET CSE | October 2020 | Part 2 | Question: 48 top

In the context of concurrency control, a given pair of operations in a schedule is called conflict schedule if

a. At least one of the operations is write operation
b. Both the operations are performed on the same data item
c. Both the operations are performed by different transactions
d. Both the operations are performed on different data items

Choose the correct answer from the options given below:

A. $(a)$ and $(b)$ only
B. $(a)$, $(b)$ and $(c)$ only
C. $(a)$, $(c)$ and $(d)$ only
D. $(c)$ and $(d)$ only

ugcnetcse-oct2020-paper2 databases transactions-and-concurrency-control

Answer key

## 5.42 Weak Entity (1) top

### 5.42.1 Weak Entity: UGC NET CSE | Junet 2015 | Part 2 | Question: 20 top

For a weak entity set to be meaningful, it must be associated with another entity set in combination with some of their attribute values, is called as:

A. Neighbour Set
B. Strong Entity Set
C. Owner Entity Set
D. Weak Set

ugcnetcse-june2015-paper2 databases weak-entity

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 5.0.1 | Q-Q | 5.0.2 | Q-Q | 5.0.3 | B | 5.0.4 | C | 5.0.5 | Q-Q |
| 5.0.6 | D | 5.0.7 | D | 5.0.8 | Q-Q | 5.0.9 | C | 5.0.10 | Q-Q |
| 5.0.11 | Q-Q | 5.0.12 | A | 5.0.13 | Q-Q | 5.0.14 | Q-Q | 5.0.15 | Q-Q |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 5.0.16 | Q-Q | 5.0.17 | Q-Q | 5.0.18 | B | 5.0.19 | Q-Q | 5.0.20 | Q-Q |
| 5.0.21 | Q-Q | 5.0.22 | D | 5.0.23 | C | 5.0.24 | D | 5.0.25 | D |
| 5.0.26 | D | 5.0.27 | Q-Q | 5.0.28 | B | 5.0.29 | Q-Q | 5.0.30 | Q-Q |
| 5.0.31 | Q-Q | 5.1.1 | Q-Q | 5.1.2 | C | 5.2.1 | A | 5.2.2 | A |
| 5.3.1 | X | 5.4.1 | B | 5.4.2 | C | 5.4.3 | B | 5.4.4 | C |
| 5.5.1 | B | 5.6.1 | A | 5.7.1 | Q-Q | 5.8.1 | B | 5.9.1 | Q-Q |
| 5.9.2 | D | 5.10.1 | B | 5.11.1 | Q-Q | 5.11.2 | A | 5.12.1 | D |
| 5.12.2 | A | 5.13.1 | A | 5.14.1 | B | 5.15.1 | D | 5.15.2 | Q-Q |
| 5.15.3 | Q-Q | 5.15.4 | A | 5.15.5 | B | 5.15.6 | D | 5.15.7 | B |
| 5.15.8 | B | 5.15.9 | B | 5.15.10 | A | 5.15.11 | D | 5.15.12 | A |
| 5.15.13 | Q-Q | 5.15.14 | A | 5.15.15 | B | 5.15.16 | C | 5.15.17 | D |
| 5.15.18 | A | 5.15.19 | C | 5.15.20 | Q-Q | 5.16.1 | Q-Q | 5.16.2 | A |
| 5.16.3 | C | 5.17.1 | A | 5.18.1 | Q-Q | 5.18.2 | B | 5.19.1 | B |
| 5.20.1 | Q-Q | 5.20.2 | Q-Q | 5.20.3 | Q-Q | 5.20.4 | Q-Q | 5.20.5 | Q-Q |
| 5.20.6 | A | 5.20.7 | B | 5.20.8 | C | 5.20.9 | D | 5.20.10 | A |
| 5.20.11 | Q-Q | 5.20.12 | D | 5.20.13 | A | 5.20.14 | Q-Q | 5.20.15 | B |
| 5.20.16 | B | 5.21.1 | D | 5.22.1 | Q-Q | 5.23.1 | B | 5.24.1 | Q-Q |
| 5.25.1 | A | 5.26.1 | B | 5.27.1 | B | 5.28.1 | B | 5.28.2 | C |
| 5.29.1 | B | 5.30.1 | Q-Q | 5.30.2 | Q-Q | 5.30.3 | Q-Q | 5.30.4 | A |
| 5.30.5 | D | 5.30.6 | C | 5.30.7 | C | 5.30.8 | A | 5.30.9 | A |
| 5.31.1 | B | 5.32.1 | B | 5.32.2 | B | 5.33.1 | D | 5.33.2 | A |
| 5.34.1 | A | 5.34.3 | D | 5.34.4 | B | 5.35.1 | B | 5.35.2 | C |
| 5.36.1 | C | 5.36.2 | C | 5.37.1 | A | 5.38.1 | C | 5.39.1 | Q-Q |
| 5.39.2 | Q-Q | 5.39.3 | Q-Q | 5.39.4 | Q-Q | 5.39.5 | Q-Q | 5.39.6 | Q-Q |
| 5.39.7 | C | 5.39.8 | B | 5.39.9 | B | 5.39.10 | B | 5.39.11 | D |
| 5.39.12 | C | 5.39.13 | B | 5.39.14 | B | 5.39.15 | D | 5.39.16 | Q-Q |
| 5.39.17 | C | 5.39.18 | D | 5.39.19 | Q-Q | 5.39.20 | Q-Q | 5.39.21 | D |
| 5.39.22 | C | 5.39.23 | A | 5.39.24 | C | 5.39.25 | A | 5.39.26 | C |
| 5.39.27 | B | 5.39.28 | B | 5.39.29 | B | 5.39.30 | C | 5.39.31 | C |
| 5.39.32 | D | 5.39.33 | A | 5.39.34 | A | 5.40.1 | Q-Q | 5.40.2 | D |
| 5.40.3 | C | 5.40.4 | Q-Q | 5.40.5 | D | 5.40.6 | D | 5.40.7 | A |
| 5.40.8 | B | 5.40.9 | B | 5.41.1 | B | 5.42.1 | C | | |

### 6.0.1 UGC NET CSE | October 2020 | Part 2 | Question: 34 top

The period of a signal is $100$ ms, then the frequency of this signal in kilohertz is _____

A. $10$ B. $10^{-1}$ C. $10^{-2}$ D. $10^{-3}$

ugcnetcse-oct2020-paper2 digital-logic

Answer key

### 6.0.2 UGC NET CSE | December 2007 | Part 2 | Question: 7 top

Simplified form of Boolean expression $\mathrm{xy}+(\sim\mathrm{x})\mathrm{z}+\mathrm{yz}$ is :

A. $\mathrm{xy}+(\sim\mathrm{x})\mathrm{z}$ B. $(\sim\mathrm{x})\mathrm{y}+(\sim\mathrm{x})\mathrm{z}$ C. $(\sim\mathrm{x})\mathrm{y}+\mathrm{xz}$ D. $\mathrm{xy}+\mathrm{xz}$

ugcnetcse-dec2007-paper2

Answer key

### 6.0.3 UGC NET CSE | December 2006 | Part 2 | Question: 6 top

The hexadecimal equivalent of $(10111)_2 \times (1110)_2$ is :

A. $150$ B. $241$ C. $142$ D. $101011110$

ugcnetcse-dec2006-paper2

Answer key

### 6.0.4 UGC NET CSE | December 2006 | Part 2 | Question: 7 top

An example of a self complementing code is :

A. $8421$ code B. Gray code C. Excess-$3$ code D. $7421$ code

ugcnetcse-dec2006-paper2

### 6.0.5 UGC NET CSE | December 2006 | Part 2 | Question: 9 top

The characteristic equation of the $\mathrm{D}$ flip-flop is :

A. B. $\mathrm{Q}=\mathrm{D}$ C. $\mathrm{Q}=1$ D. $\mathrm{Q}=0$

ugcnetcse-dec2006-paper2

### 6.0.6 UGC NET CSE | December 2004 | Part 2 | Question: 10 top

The characteristic equation of a $\mathrm{T}$ flip-flop is :

A. $Q_{n+1} = T\overline{Q}_n + \overline{T}Q_n$
B. $Q_{n+1} = T + Q_n$
C. $Q_{n+1} = TQ_n$
D. $Q_{n+1} = \overline{T}\overline{Q}_n$

The symbols used have the usual meaning.

10. The characteristic equation of a T flip-flop is :
(A) $Q_{n+1} = T\overline{Q}_n + \overline{T}Q_n$ (B) $Q_{n+1} = T + Q_n$
(C) $Q_{n+1} = TQ_n$ (D) $Q_{n+1} = \overline{T}\overline{Q}_n$
The symbols used have the usual meaning.

ugcnetcse-dec2004-paper2

Answer key

### 6.0.7 UGC NET CSE | December 2018 | Part 2 | Question: 5 top

Which of the following statements are true ?

i. Every logic network is equivalent to one using just NAND gates or just NOR gates.

ii. Boolean expressions and logic networks correspond to labelled acyclic diagraphs.
iii. No two Boolean algebras with n atoms are isomorphic.
iv. Non-zero elements of finite Boolean algebras are not uniquely expressible as joins of atoms

Choose the correct answer from the code given below :

A. i and iv only
B. i, ii and iii only
C. i and ii only
D. ii, iii, and iv only

ugcnetcse-dec2018-paper2 digital-logic

### 6.0.8 UGC NET CSE | December 2018 | Part 2 | Question: 7 top

The boolean expression $\overline{A} \cdot B + A \cdot \overline{B} + A \cdot B$ is equivalenet to

A. $\overline{A} \cdot B$
B. $\overline{A+B}$
C. $A \cdot B$
D. $A+B$

ugcnetcse-dec2018-paper2 digital-logic

Answer key

### 6.0.9 UGC NET CSE | December 2018 | Part 2 | Question: 10 top

In computers, subtraction is generally carried out by

A. $9$'s complement
B. $1$'s complement
C. $10$'s complement
D. $2$'s complement

ugcnetcse-dec2018-paper2 digital-logic

Answer key

### 6.0.10 UGC NET CSE | December 2018 | Part 2 | Question: 11 top

Consider the following boolean equations:

i. $wx + w(x+y) + x(x+y) = x + wy$
ii. $(w\overline{x}(y + x\overline{z}) + \overline{wx})y = \overline{x}y$

What can you say about the above equations ?

A. (i) is true and (ii) is false
B. (i) is false and (ii) is true
C. Both (i) and (ii) are true
D. Both (i) and (ii) are false

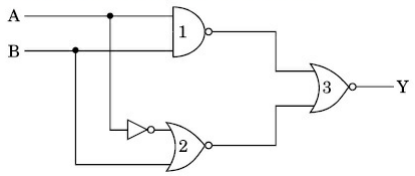
ugcnetcse-dec2018-paper2 digital-logic

Answer key

### 6.0.11 UGC NET CSE | December 2018 | Part 2 | Question: 17 top

Find the boolean expression for the logic circuit shown below:

(1-NAND gate, 2-NOR gate, 3-NOR gate)




A. $A\overline{B}$
B. $\overline{A}B$
C. $AB$
D. $\overline{A}\overline{B}$

ugcnetcse-dec2018-paper2 digital-logic

Answer key

### 6.0.12 UGC NET CSE | September 2013 | Part 2 | Question: 26 top

Match the following identities/laws to their corresponding name **:**

| | | | |
|---|---|---|---|
| (a) | $x+x=x$ | i. | Dominance |
| | $x \cdot x=x$ | | |
| (b) | $x+0=x$ | ii. | Absorption |
| | $x \cdot 1=x$ | | |
| (c) | $x+1=1$ | iiii. | Idempotent |
| | $x \cdot 1=x$ | | |
| (d) | $x \cdot (x+y)=x$ | iv. | Identity |

**Codes :**

A. (a)-iii, (b)-iv, (c)-i, (d)-ii
B. (a)-iv, (b)-iii, (c)-i, (d)-ii
C. (a)-iv, (b)-iii, (c)-ii, (d)-i
D. (a)-iii, (b)-iv, (c)-ii, (d)-i

ugcnetsep2013ii digital-logic

Answer key

## 6.0.13 UGC NET CSE | June 2013 | Part 3 | Question: 46 top

Match the following :

| | | | |
|---|---|---|---|
| a. | TTL | i. | High component density |
| b. | ECL | ii. | Low power consumption |
| c. | MOS | iii. | Evaluation of "diode-transistor-logic" |
| d. | CMOS | iv. | High Speed digital circuits |

**Codes :**

A. a-iii, b-ii, c-i, d-iv
B. a-i, b-iv, c-iii, d-ii
C. a-iii, b-iv, c-i, d-ii
D. a-i, b-ii, c-iii, d-iv

ugcnetcse-june2013-paper3 digital-logic

Answer key

## 6.0.14 UGC NET CSE | June 2009 | Part 2 | Question: 04 top

The characteristic equation of a JK flip-flop is :

A. $Q_{n+1}=J \cdot Q_n+K \cdot Q_n$
B. $Q_{n+1}=J \cdot \bar{Q}_n+\bar{K} \cdot Q_n$
C. $Q_{n+1}=Q_n+J \cdot K$
D. $Q_{n+1}=(J+K) Q_n$

ugcnetcse-june2009-paper2

Answer key

## 6.0.15 UGC NET CSE | June 2016 | Part 2 | Question: 6 top

Which of the following logic expression is incorrect ?

A. $1 \oplus 0=1$
B. $1 \oplus 1 \oplus 1=1$
C. $1 \oplus 1 \oplus 0=1$
D. $1 \oplus 1=0$

ugcnetcse-june2016-paper2 digital-logic

Answer key

## 6.0.16 UGC NET CSE | June 2016 | Part 2 | Question: 9 top

The simplified form of the Boolean equation $(A\bar{B}+A\bar{B}+AC)(\bar{A}\bar{C}+\bar{B})$ is

A. $A\bar{B}$
B. $A\bar{B}C$
C. $\bar{A}B$
D. $ABC$

ugcnetcse-june2016-paper2 digital-logic

Answer key

## 6.0.17 UGC NET CSE | June 2016 | Part 2 | Question: 8 top

Simplified Boolean equation for the following truth table is :

| $x$ | $y$ | $z$ | $F$ |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

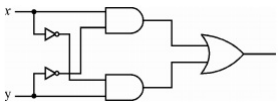
A. $F = y\bar{z} + \bar{y}z$
B. $F = x\bar{y} + \bar{x}y$
C. $F = \bar{x}z + x\bar{z}$
D. $F = \bar{x}z + x\bar{z} + xyz$

ugcnetcse-june2016-paper2 digital-logic

Answer key

## 6.0.18 UGC NET CSE | December 2013 | Part 3 | Question: 53 top

What will be output of the following logic diagram ?




A. x $\text{OR}$ y
B. x $\text{AND}$ y
C. x $\text{XOR}$ y
D. x $\text{XNOR}$ y

ugcnetcse-dec2013-paper3 digital-logic

Answer key

## 6.0.19 UGC NET CSE | December 2013 | Part 3 | Question: 51 top

Synchronization is achieved by a timing device called a _____ which generates a periodic train of _____.

A. clock generator, clock pulse
B. master generator, clock pulse
C. generator, clock
D. master clock generator, clock pulse

ugcnetcse-dec2013-paper3 digital-logic

Answer key

## 6.0.20 UGC NET CSE | December 2013 | Part 2 | Question: 6 top

$\text{FAN IN}$ of a component $\text{A}$ is defined as

A. Number of components that can call or pass control to component $\text{A}$.
B. Number of components that are called by component $\text{A}$.
C. Number of components related to component $\text{A}$.
D. Number of components dependent on component $\text{A}$.

ugcnetcse-dec2013-paper2 digital-logic

Answer key

## 6.0.21 UGC NET CSE | December 2007 | Part 2 | Question: 8 top

In order to build a $\text{MOD - 18}$ counter, the minimum number of flip flops needed is equal to :

A. $18$
B. $9$
C. $5$
D. $4$

ugcnetcse-dec2007-paper2

Answer key

## 6.1 Adder (3) top

### 6.1.1 Adder: UGC NET CSE | August 2016 | Part 2 | Question: 10 top

Match the following :

| | List-I | | List-II |
|---|---|---|---|
| a. | Controlled inverter | i. | a circuit that can add 3 bits |
| b. | Full adder | ii. | a circuit that can add two binary numbers |
| c. | Half adder | iii. | a circuit that transmits a binary word or its 1's complement |
| d. | Binary adder | iv. | a logic circuit that adds 2 bits |

**Codes :**

A. a-iii, b-ii, c-iv, d-i
B. a-ii, b-iv, c-i, d-ii
C. a-iii, b-iv, c-i, d-ii
D. a-iii, b-i, c-iv, d-ii

ugcnetcse-aug2016-paper2 digital-logic adder

Answer key

### 6.1.2 Adder: UGC NET CSE | December 2013 | Part 2 | Question: 40 top

Which of the following statements are true ?

I. A circuit that adds two bits, producing a sum bit and carry bit is called half adder.
II. A circuit that adds two bits, producing a sum bit and carry bit is called full adder.
III. A circuit that adds two bits and a carry bit producing a sum bit and a carry bit is called full adder.
IV. A device that accepts the value of a Boolean variable as input and produces its complement is called an inverter.

A. I & II
B. II & III
C. I, II, III
D. I, III & IV

ugcnetcse-dec2013-paper2 digital-logic adder

Answer key

### 6.1.3 Adder: UGC NET CSE | December 2014 | Part 2 | Question: 06 top

The $\mathrm{BCD}$ adder to add two decimal digits needs minimum of

A. $6$ full adders and $2$ half adders
B. $5$ full adders and $3$ half adders
C. $4$ full adders and $3$ half adders
D. $5$ full adders and $2$ half adders

ugcnetcse-dec2014-paper2 digital-logic adder

Answer key

## 6.2 Boolean Algebra (8) top

### 6.2.1 Boolean Algebra: UGC NET CSE | December 2009 | Part 2 | Question: 06 top

The simplified form of the Boolean expression (X + Y + XY) (X + Z) is

(A) X + Y + ZX + Y

(B) XY – YZ

(C) X + YZ

(D) XZ + Y

ugcnetcse-dec2009-paper2 digital-logic boolean-algebra

Answer key

### 6.2.2 Boolean Algebra: UGC NET CSE | June 2009 | Part 2 | Question: 03 top

The Boolean expression $\bar{x}\bar{y}z + yz + xz$ is equivalent to :

A. x B. y C. z D. $x+y+z$

ugcnetcse-june2009-paper2 digital-logic boolean-algebra

Answer key

### 6.2.3 Boolean Algebra: UGC NET CSE | June 2011 | Part 2 | Question: 4 top

The absorption law in Boolean algebra say that

A. $X+X=X$
B. $X.X=X$
C. $X+X.Y=X$
D. None of the above

digital-logic boolean-algebra ugcnetcse-june2011-paper2

Answer key

### 6.2.4 Boolean Algebra: UGC NET CSE | June 2013 | Part 2 | Question: 41 top

How many different Boolean functions of degree 4 are there?

A. $2^4$ B. $2^8$ C. $2^{12}$ D. $2^{16}$

ugcnetcse-june2013-paper2 digital-logic boolean-algebra

Answer key

### 6.2.5 Boolean Algebra: UGC NET CSE | June 2014 | Part 2 | Question: 16 top

How many different truth tables of the compound propositions are there that involve the propositions $p$ & $q$ ?

A. $2$ B. $4$ C. $8$ D. $16$

ugcnetcse-june2014-paper2 digital-logic boolean-algebra

Answer key

### 6.2.6 Boolean Algebra: UGC NET CSE | June 2014 | Part 2 | Question: 17 top

A Boolean function $F$ is called self dual if and only if $F(x_1, x_2, \ldots\ldots x_n) = F(\bar{x}_1, \bar{x}_2, \ldots\ldots \bar{x}_n)$. How many Boolean functions of degree $n$ are self-dual ?

A. $2^n$ B. $(2)^{2^n}$ C. $(2)^{n^2}$ D. $(2)^{2^{n-1}}$

ugcnetcse-june2014-paper2 digital-logic boolean-algebra

Answer key

### 6.2.7 Boolean Algebra: UGC NET CSE | Junet 2015 | Part 2 | Question: 6 top

Consider the following statements:

a. Boolean expressions and logic gates are equivalent
b. Optimal binary search trees can be constructed using dynamic programming
c. Choosing the activity with the earliest finish time gives an optimal schedule for single-resource scheduling problems

Which of these statement(s) is/are correct?

A. a only B. b only C. a and b D. a, b, and c

ugcnetcse-june2015-paper2 digital-logic boolean-algebra

Answer key

### 6.2.8 Boolean Algebra: UGC NET CSE | October 2020 | Part 2 | Question: 42 top

Simplified expression/s for following Boolean function
$F(A,B,C,D) = \Sigma(0,1,2,3,6,12,13,14,15)$ is/are

a. $A'B' + AB + A'C'D'$
b. $A'B' + AB + A'CD'$
c. $A'B' + AB + BC'D'$
d. $A'B' + AB + BCD'$

Choose the correct answer from the options given below:

A. $(a)$ only B. $(b)$ only C. $(a)$ and $(b)$ only D. $(b)$ and $(d)$ only

ugcnetcse-oct2020-paper2 digital-logic boolean-algebra

Answer key

## 6.3 Boolean Function (1) top

### 6.3.1 Boolean Function: UGC NET CSE | June 2013 | Part 3 | Question: 45 top

The simplified function in product of sums of Boolean function $F(W,X,Y,Z) = \Sigma(0,1,2,5,8,9,10)$ is

A. $(W'+X')(Y'+Z')(X'+Z)$
B. $(W'+X')(Y'+Z')(X'+Z')$
C. $(W'+X')(Y'+Z)(X'+Z)$
D. $(W'+X')(Y+Z')(X'+Z)$

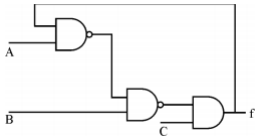
ugcnetcse-june2013-paper3 digital-logic boolean-function

Answer key

## 6.4 Circuit Output (1) top

### 6.4.1 Circuit Output: UGC NET CSE | December 2012 | Part 2 | Question: 1 top

Consider the circuit shown below. IN a certain steady state, 'Y' is at logical 'l'. What are the possible values of A, B, C?




A. A=0, B=0, C=1
B. A=0, B=C=1
C. A=1, B=C=0
D. A= B=1, C=1

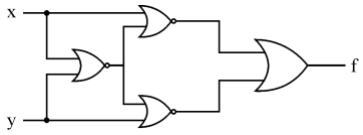
ugcnetcse-dec2012-paper2 digital-logic circuit-output

Answer key

## 6.5 Combinational Circuit (3) top

### 6.5.1 Combinational Circuit: UGC NET CSE | August 2016 | Part 2 | Question: 9 top

Which of the following logic operations is performed by the following given combinational circuit ?



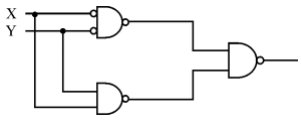

A. EXCLUSIVE-OR
B. EXCLUSIVE-NOR
C. NAND
D. NOR

ugcnetcse-aug2016-paper2 digital-logic combinational-circuit

Answer key

### 6.5.2 Combinational Circuit: UGC NET CSE | August 2016 | Part 3 | Question: 6 top

The output of the following combinational circuit




is :

A. $X.Y$
B. $X+Y$
C. $X \bigoplus Y$
D. $X \bigoplus Y$

ugcnetcse-aug2016-paper3 digital-logic combinational-circuit

Answer key

### 6.5.3 Combinational Circuit: UGC NET CSE | July 2018 | Part 2 | Question: 93 top

Match the terms in **List-I** with the options given in **List-II** :

| | **List-I** | | **List-II** |
|---|---|---|---|
| (a) | Decoder | (i) | 1 line to $2^n$ lines |
| (b) | Multiplexer | (ii) | n lines to $2^n$ lines |
| (c) | De multiplexer | (iii) | $2^n$ lines to 1 line |
| | | (iv) | $2^n$ lines to $2^{n-1}$ lines |

**Code :**

A. (a)-(ii); (b)-(i); (c)-(iii)
B. (a)-(ii); (b)-(iii); (c)-(i)
C. (a)-(ii); (b)-(i); (c)-(iv)
D. (a)-(iv);(b)-(ii); (c)-(i)

ugcnetcse-july2018-paper2 digital-logic combinational-circuit

Answer key

## 6.6 Digital Circuits (11) top

### 6.6.1 Digital Circuits: UGC NET CSE | August 2016 | Part 3 | Question: 65 top

Which of the following 2 input Boolean logic functions is linearly inseparable ?

(a) AND

(b) OR

(c) NOR

(d) XOR

(e) NOT XOR

A. (a) and (b)
B. (b) and (c)
C. (c), (d) and (e)
D. (d) and (e)

ugcnetcse-aug2016-paper3 digital-logic digital-circuits

Answer key

### 6.6.2 Digital Circuits: UGC NET CSE | December 2008 | Part 2 | Question: 4 top

Extremely low power dissipation and low cost per gate can be achieved in:

A. MOS ICs
B. C MOS ICs
C. TTL ICs
D. ECL ICs

ugcnetcse-dec2008-paper2 digital-logic digital-circuits

### 6.6.3 Digital Circuits: UGC NET CSE | December 2008 | Part 2 | Question: 5 top

An example of a universal building block is:

1. $X-OR$ gate
2. $AND$ gate
3. $OR$ gate
4. $NOR$ gate

ugcnetcse-dec2008-paper2 digital-logic digital-circuits

Answer key

### 6.6.4 Digital Circuits: UGC NET CSE | December 2010 | Part 2 | Question: 7 top

$AB+(A\bar{+}B)$ is equivalent to

A. $A\bigoplus B$
B. $A\bigodot B$
C. $(A\bigoplus B)\bigodot A$
D. $(A\bigodot B)\bigoplus A$

ugcnetcse-dec2010-paper2 digital-logic digital-circuits

Answer key

### 6.6.5 Digital Circuits: UGC NET CSE | December 2012 | Part 2 | Question: 38 top

Match the following IC families with their basic circuits :

| | | | |
|---|---|---|---|
| a. | TTL | i. | NAND |
| b. | ECL | ii. | NOR |
| c. | CMOS | iii. | Inverter |

**Code :**

A. a-i, b-ii, c-iii
B. a-iii, b-ii, c-i
C. a-ii, b-iii, c-i
D. a-ii, b-i, c-iii

ugcnetcse-dec2012-paper2 digital-logic digital-circuits

Answer key

### 6.6.6 Digital Circuits: UGC NET CSE | December 2012 | Part 2 | Question: 47 top

Match the following :

| | | | |
|---|---|---|---|
| a. | TTL | i. | High fan out |
| b. | ECL | ii. | Low propagation delay |
| d. | CMOS | iii. | High power dissipation |

**Code :**

A. a-iii, b-ii, c-i
B. a-i, b-ii, c-iii
C. a-i, b-iii, c-ii
D. a-iii, b-i, c-ii

ugcnetcse-dec2012-paper2 digital-logic digital-circuits

Answer key

### 6.6.7 Digital Circuits: UGC NET CSE | December 2012 | Part 2 | Question: 49 top

Identify the operation which is commutative but not associative?

A. OR
B. NOR
C. EX-OR
D. NAND

ugcnetcse-dec2012-paper2 digital-logic digital-circuits

Answer key

### 6.6.8 Digital Circuits: UGC NET CSE | January 2017 | Part 2 | Question: 7 top

ECL is the fastest of all logic families. High speed in ECL is possible because transistors are used in difference amplifier configuration, in which they are never driven into _____.

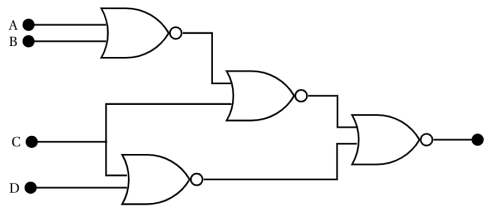
A. Race condition
B. Saturation
C. Delay
D. High impedance

ugcnetjan2017ii digital-logic digital-circuits

Answer key

### 6.6.9 Digital Circuits: UGC NET CSE | June 2010 | Part 2 | Question: 6 top

The logic expression for the output of the circuit shown in the figure is




A. $\bar{A}\bar{C} + \bar{B}\bar{C} + CD$
B. $A\bar{C} + B\bar{C} + \bar{C}D$
C. $ABC + \bar{C}\bar{D}$
D. $\bar{A}\bar{B} + \bar{B}\bar{C} + \bar{C}\bar{D}$

ugcnetcse-june2010-paper2 digital-logic digital-circuits

Answer key

### 6.6.10 Digital Circuits: UGC NET CSE | June 2010 | Part 2 | Question: 8 top

What is the transitive voltage for the voltage input of a CMOS operating from $10V$ supply ?

A. $1V$ B. $2V$ C. $5V$ D. $10V$

ugcnetcse-june2010-paper2 digital-logic digital-circuits

### 6.6.11 Digital Circuits: UGC NET CSE | September 2013 | Part 2 | Question: 23 top

Which one of the following set of gates is best suited for ‘parity’ checking and ‘parity’ generation?

A. AND, OR, NOT B. NAND, NOR C. EX-OR, EX-NOR D. None of the above

ugcnetsep2013ii digital-logic digital-circuits

Answer key

## 6.7 Digital Counter (1) top

### 6.7.1 Digital Counter: UGC NET CSE | June 2019 | Part 2 | Question: 15 top

What will be the number of states when a MOD-$2$ counter is followed by a MOD-$5$ counter?

A. $5$ B. $10$ C. $15$ D. $20$

ugcnetcse-june2019-paper2 digital-counter

Answer key

## 6.8 Dual Function (2) top

### 6.8.1 Dual Function: UGC NET CSE | December 2008 | Part 2 | Question: 13 top

The dual of the switching function $x + yz$ is :

A. $x + yz$
B. $x' + y'z'$
C. $x(y + z)$
D. $x'(y' + z')$

ugcnetcse-dec2008-paper2 digital-logic dual-function

Answer key

### 6.8.2 Dual Function: UGC NET CSE | December 2013 | Part 2 | Question: 31 top

The dual of a Boolean expression is obtained by interchanging

A. Boolean sums and Boolean products
B. Boolean sums and Boolean products or interchanging $0's$ and $1's$
C. Boolean sums and Boolean products and interchanging $0's$ and $1's$
D. Interchanging $0's$ and $1's$

ugcnetcse-dec2013-paper2 digital-logic dual-function

Answer key

## 6.9 Encoding (1) top

### 6.9.1 Encoding: UGC NET CSE | June 2014 | Part 2 | Question: 37 top

A text is made up of the characters $\alpha, \beta, \gamma, \delta$ and $\sigma$ with the probability $0.12, 0.40, 0.15, 0.08$ and $0.25$ respectively. The optimal coding technique will have the average length of

A. $1.7$ B. $2.15$ C. $3.4$ D. $3.8$

ugcnetcse-june2014-paper2 computer-networks encoding

Answer key

## 6.10 Excess 3 (1) top

### 6.10.1 Excess 3: UGC NET CSE | December 2014 | Part 2 | Question: 07 top

The Excess-$3$ decimal code is a self-complementing code because

A. The binary sum of a code and its $9's$ complement is equal to $9$.
B. It is a weighted code.
C. Complement can be generated by inverting each bit pattern.
D. The binary sum of a code and its $10's$ complement is equal to $9$.

ugcnetcse-dec2014-paper2 digital-logic excess-3

Answer key

## 6.11 Flip Flop (7) top

### 6.11.1 Flip Flop: UGC NET CSE | December 2008 | Part 2 | Question: 14 top

The characteristics equation of $D$ flip-flop is :

A. $Q$=$1$ B. $Q$=$0$ C. $Q$=$\bar{D}$ D. $Q$=$D$

ugcnetcse-dec2008-paper2 digital-logic flip-flop

Answer key

### 6.11.2 Flip Flop: UGC NET CSE | December 2010 | Part 2 | Question: 8 top

An Astable multivibrator has :

A. One stable state
B. Two stable states
C. No stable states
D. None of these

ugcnetcse-dec2010-paper2 digital-logic flip-flop

Answer key

### 6.11.3 Flip Flop: UGC NET CSE | January 2017 | Part 2 | Question: 8 top

A binary $3$-bit down counter uses $J$-$K$ flip-flops, $FF_i$ with inputs $J_i$, $K_i$ and outputs $Q_i$, $i$ $=0,1,2$ respectively. The minimized expression for the input from following is :

I. $J_0 = K_0 = 0$
II. $J_0 = K_0 = 1$
III. $J_1 = K_1 = Q_0$
IV. $J_1 = K_1 = \overline{Q}_0$
V. $J_2 = K_2 = Q_1 Q_0$
VI. $J_2 = K_2 = \overline{Q}_1 \overline{Q}_0$

A. I, III, V B. I, IV, VI C. II, III, V D. II, IV, VI

ugcnetjan2017ii digital-logic flip-flop

Answer key

### 6.11.4 Flip Flop: UGC NET CSE | July 2018 | Part 2 | Question: 92 top

In $\mathrm{RS}$ flip-flop, the output of the flip-flop at time $(t+1)$ same as the output at time $t$, after the occurrence of a clock pulse if :

A. $S=R=1$ B. $S=0, R=1$ C. $S=2, R=0$ D. $S=R=0$

ugcnetcse-july2018-paper2 digital-logic flip-flop

Answer key

### 6.11.5 Flip Flop: UGC NET CSE | June 2016 | Part 2 | Question: 10 top

In a positive edge triggered $J$-$K$ flip flop , if $J$ and $K$ both are high then the output will be _____on the rising edge of the clock :

A. No change B. Set C. Reset D. Toggle

ugcnetcse-june2016-paper2 digital-logic flip-flop

Answer key

### 6.11.6 Flip Flop: UGC NET CSE | September 2013 | Part 3 | Question: 34 top

The power dissipation of a flip-flop is $3$ mW. The power dissipation of a digital system with $4$ flip-flops is given by :

A. $3^4$ mW B. $4^3$ mW C. $4/3$ mW D. $12$ mW

ugcnetcse-sep2013-paper3 digital-logic flip-flop

Answer key

### 6.11.7 Flip Flop: UGC NET CSE | September 2013 | Part 3 | Question: 35 top

An Astable multi vibrator using the $555$ timer to generate a square wave of $5$ KHz with $70\%$ duty cycle will have :

A. $R_A = 40.4K\Omega, R_B = 17.25K\Omega, C = 2000pF$
B. $R_A = 17.25K\Omega, R_B = 40.4K\Omega, C = 2000pF$
C. $R_A = 40.4K\Omega, R_B = 17.25K\Omega, C = 5000pF$
D. $R_A = 17.25K\Omega, R_B = 40.4K\Omega, C = 5000pF$

ugcnetcse-sep2013-paper3 digital-logic flip-flop

Answer key

## 6.12 Floating Point Representation (2) top

### 6.12.1 Floating Point Representation: UGC NET CSE | December 2014 | Part 2 | Question: 09 top

The range of representable normalized numbers in the floating point binary fractional representation in a $32$-bit word with $1$-bit sign, $8$-bit excess $128$ biased exponent and $23$-bit mantissa is :

A. $2^{-128}$ to $(1-2^{-23}) \times 2^{127}$
B. $(1-2^{-23}) \times 2^{-127}$ to $2^{128}$
C. $(1-2^{-23}) \times 2^{-127}$ to $2^{23}$
D. $2^{-129}$ to $(1-2^{-23}) \times 2^{127}$

ugcnetcse-dec2014-paper2 digital-logic floating-point-representation

Answer key

### 6.12.2 Floating Point Representation: UGC NET CSE | December 2018 | Part 2 | Question: 16 top

The decimal floating point number $-40.1$ represented using IEEE-754 $32$-bit representation and written in hexadecimal form is

A. 0x$C2206666$ B. 0x$C2206000$ C. 0x$C2006666$ D. 0x$C2006000$

ugcnetcse-dec2018-paper2 digital-logic number-representation floating-point-representation

Answer key

## 6.13 Full Adder (1) top

### 6.13.1 Full Adder: UGC NET CSE | Junet 2015 | Part 2 | Question: 7 top

Consider a full-adder with the following input values :

a. $x = 1, y = 0$ and $C_i$(carry input)$= 0$
b. $x = 0, y = 1$ and $C_i = 1$

Compute the value of S(sum) and $C_o$ (carry output) for the above input values :

A. $S=1, C_o=0$ and $S=0, C_o=1$
B. $S=0, C_o=0$ and $S=1, C_o=1$
C. $S=1, C_o=1$ and $S=0, C_o=0$
D. $S=0, C_o=1$ and $S=1, C_o=0$

ugcnetcse-june2015-paper2 digital-logic full-adder

Answer key

## 6.14 Ieee Representation (2) top

### 6.14.1 Ieee Representation: UGC NET CSE | June 2016 | Part 2 | Question: 7 top

The $\text{IEEE-754}$ double precision format to represent floating point numbers, has a length of _____ bits.

A. $16$
B. $32$
C. $48$
D. $64$

ugcnetcse-june2016-paper2 digital-logic ieee-representation

Answer key

### 6.14.2 Ieee Representation: UGC NET CSE | September 2013 | Part 2 | Question: 7 top

The $\text{IEEE}$ single-precision and double-precision format to represent floating-point numbers, has a length of _____ and _____ respectively.

A. $8$ bits and $16$ bits
B. $16$ bits and $32$ bits
C. $32$ bits and $64$ bits
D. $64$ bits and $128$ bits

ugcnetsep2013ii digital-logic ieee-representation

Answer key

## 6.15 K Map (3) top

### 6.15.1 K Map: UGC NET CSE | August 2016 | Part 2 | Question: 8 top

The Karnaugh map for a Boolean function is given as

| | $\bar{C}\bar{D}$ | $\bar{C}D$ | $CD$ | $C\bar{D}$ |
|---|---|---|---|---|
| $\bar{A}\bar{B}$ | 0 | 0 | 0 | 0 |
| $\bar{A}B$ | 0 | 0 | 1 | 0 |
| $AB$ | 1 | 1 | 1 | 1 |
| $A\bar{B}$ | 0 | 1 | 1 | 1 |

The simplified Boolean equation for the above Karnaugh Map is

A. $AB+CD+A\bar{B}+AD$
B. $AB+AC+AD+BCD$
C. $AB+AD+BC+ACD$
D. $AB+AC+BC+BCD$

ugcnetcse-aug2016-paper2 digital-logic k-map

Answer key

### 6.15.2 K Map: UGC NET CSE | July 2018 | Part 2 | Question: 99 top

Simplify the following using $\text{K}$ – map :

$F(A,B,C,D)=\Sigma(0,1,2,8,9,12,13)$

$d(A,B,C,D)=\Sigma(10,11,14,15)$

$\text{d}$ stands for don't care condition.

A. $A+\bar{B}\bar{D}+BC$
B. $A+\bar{B}\bar{D}+\bar{B}\bar{C}$
C. $\bar{A}+\bar{B}\bar{C}$
D. $\bar{A}+\bar{B}\bar{C}+\bar{B}\bar{D}$

ugcnetcse-july2018-paper2 digital-logic k-map

Answer key

### 6.15.3 K Map: UGC NET CSE | June 2010 | Part 2 | Question: 10 top

The function represented by the $\text{k}$-map given below is

| A \ BC | | | |
|---|---|---|---|
| | 1 | 0 | 0 | 1 |
| | 1 | 0 | 0 | 1 |

A. $A \cdot B$
B. $AB + BC + CA$
C. $\overline{B \bigoplus C}$
D. $A \cdot B \cdot C$

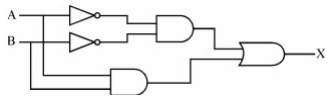
ugcnetcse-june2010-paper2 digital-logic k-map

Answer key

## 6.16 Logic Circuit Diagram (1) top

### 6.16.1 Logic Circuit Diagram: UGC NET CSE | September 2013 | Part 2 | Question: 49 top

What type of logic circuit is represented by the figure shown below ?




A. XOR
B. XNOR
C. XAND
D. XNAND

ugcnetsep2013ii digital-logic logic-circuit-diagram

Answer key

## 6.17 Memory (1) top

### 6.17.1 Memory: UGC NET CSE | December 2009 | Part 2 | Question: 08 top

The highest noise margin is offered by

A. BICMOS
B. TTL
C. ECL
D. CMOS

ugcnetcse-dec2009-paper2 digital-logic memory

## 6.18 Multiplexer (4) top

### 6.18.1 Multiplexer: UGC NET CSE | December 2008 | Part 2 | Question: 15 top

If $4$ input multiplexers drive a $4$ input multiplexer, we get a:

A. $16$ input $MUX$
B. $8$ input $MUX$
C. $4$ input $MUX$
D. $2$ input $MUX$

ugcnetcse-dec2008-paper2 digital-logic multiplexer

Answer key

### 6.18.2 Multiplexer: UGC NET CSE | June 2009 | Part 2 | Question: 05 top

In order to implement a $\mathrm{n}$ variable switching function, a $\mathrm{MUX}$ must have :

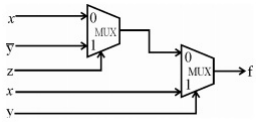
A. $2^n$ inputs
B. $2^n + 1$ inputs
C. $2^{n-1}$ inputs
D. $2^n - 1$ inputs

ugcnetcse-june2009-paper2 digital-logic multiplexer

Answer key

### 6.18.3 Multiplexer: UGC NET CSE | June 2012 | Part 3 | Question: 53 top

Consider the below circuit and find the output function f(x, y, z)




A. $x\bar{z} + xy + \bar{y}z$
B. $x\bar{z} + xy + \bar{y}\bar{z}$
C. $xz + xy + \bar{y}\bar{z}$
D. $xz + x\bar{y} + \bar{y}z$

ugcnetcse-june2012-paper3 digital-logic multiplexer

Answer key

### 6.18.4 Multiplexer: UGC NET CSE | June 2014 | Part 3 | Question: 68 top

A terminal multiplexer has six $1200$ bps terminals and $'n'$ $300$ bps terminals connected to it. If the outgoing line is $9600$ bps, what is the value of $n$?

A. $4$
B. $8$
C. $16$
D. $28$

ugcnetjune2014iii digital-logic multiplexer

Answer key

## 6.19 Number Representation (12) top

### 6.19.1 Number Representation: UGC NET CSE | August 2016 | Part 2 | Question: 6 top

The octal number $326.4$ is equivalent to

A. $(214.2)_{10}$ and $(D6.8)_{16}$
B. $(212.5)_{10}$ and $(D6.8)_{16}$
C. $(214.5)_{10}$ and $(D6.8)_{16}$
D. $(214.5)_{10}$ and $(D6.4)_{16}$

ugcnetcse-aug2016-paper2 digital-logic number-representation

Answer key

### 6.19.2 Number Representation: UGC NET CSE | August 2016 | Part 2 | Question: 7 top

Which of the following is the most efficient to perform arithmetic operations on the numbers ?

A. Sign-magnitude
B. $1's$ complement
C. $2's$ complement
D. $9's$ complement

ugcnetcse-aug2016-paper2 digital-logic number-representation

Answer key

### 6.19.3 Number Representation: UGC NET CSE | December 2009 | Part 2 | Question: 09 top

The answer of the operation (10111)2 * (1110)2 in hex equivalence is

(A) 150

(B) 241

(C) 142

(D) 101011110

ugcnetcse-dec2009-paper2 digital-logic number-representation

Answer key

### 6.19.4 Number Representation: UGC NET CSE | December 2009 | Part 2 | Question: 10 top

How many 1's are present in the binary representation of 3 × 512 + 7 × 64 + 5 × 8 + 3

(A) 8

(B) 9

(C) 10

(D) 11

ugcnetcse-dec2009-paper2 digital-logic number-representation

Answer key

### 6.19.5 Number Representation: UGC NET CSE | December 2010 | Part 2 | Question: 6 top

The decimal number equivalent of $(4057.06)_8$ is

A. $2095.75$ B. $2095.075$ C. $2095.937$ D. $2095.0937$

ugcnetcse-dec2010-paper2 digital-logic number-representation

Answer key

### 6.19.6 Number Representation: UGC NET CSE | December 2010 | Part 2 | Question: 9 top

$12$-bit $2's$ complement of $-73.75$ is

A. $01001001.1100$
B. $11001001.1100$
C. $10110110.0100$
D. $10110110.1100$

ugcnetcse-dec2010-paper2 digital-logic number-representation

Answer key

### 6.19.7 Number Representation: UGC NET CSE | July 2018 | Part 2 | Question: 95 top

The hexadecimal equivalent of the binary integer number 110101101 is

A. D24 B. 1 B D C. 1 A E D. 1 A D

ugcnetcse-july2018-paper2 digital-logic number-representation

Answer key

### 6.19.8 Number Representation: UGC NET CSE | July 2018 | Part 2 | Question: 96 top

Perform the following operation for the binary equivalent of the decimal numbers $(-14)_{10} + (-15)_{10}$. The solution in 8 bit representation is

A. 11100011 B. 00011101 C. 10011101 D. 11110011

ugcnetcse-july2018-paper2 digital-logic number-representation

Answer key

### 6.19.9 Number Representation: UGC NET CSE | June 2009 | Part 2 | Question: 13 top

The octal equivalent of hexadecimal $(\mathrm{A.B})_{16}$ is :

A. $47.21$ B. $12.74$ C. $12.71$ D. $17.21$

ugcnetcse-june2009-paper2 number-representation

Answer key

### 6.19.10 Number Representation: UGC NET CSE | June 2012 | Part 2 | Question: 35 top

If an integer needs two bytes of storage, then the maximum value of signed integer is

A. $2^{16} - 1$ B. $2^{15} - 1$ C. $2^{16}$ D. $2^{15}$

digital-logic number-representation ugcnetcse-june2012-paper2

Answer key

### 6.19.11 Number Representation: UGC NET CSE | June 2014 | Part 2 | Question: 18 top

Which of the following statement(s) is (are) not correct ?

i. The $2$'s complement of $0$ is $0$.

ii. In $2$'s complement, the left most bit cannot be used to express a quantity.

iii. For an $n$-bit word ($2$'s complement) which includes the sign bit, there are $2^{n-1}$ positive integers, $2^{n+1}$ negative integers and one 0 for a total of $2^n$ unique states.

iv. In $2$'s complement the significant information is contained in the $1$'s of positive numbers and $0$'s of the negative numbers.

A. $i$ & $iv$ B. $i$ & $ii$ C. $iii$ D. $iv$

ugcnetcse-june2014-paper2 digital-logic number-representation

Answer key

### 6.19.12 Number Representation: UGC NET CSE | November 2017 | Part 2 | Question: 7 top

The octal equivalent of the binary number $1011101011$ is

A. $7353$ B. $1353$ C. $5651$ D. $5657$

ugcnetcse-nov2017-paper2 number-representation

Answer key

## 6.20 Number System (6) top

### 6.20.1 Number System: UGC NET CSE | December 2013 | Part 2 | Question: 32 top

Given that $(292)_{10} = (1204)_x$ in some number system $x$. The base $x$ of that number system is

A. 2 B. 8 C. 10 D. None of the above

ugcnetcse-dec2013-paper2 digital-logic number-system

Answer key

### 6.20.2 Number System: UGC NET CSE | January 2017 | Part 2 | Question: 10 top

The hexadecimal equivalent of the octal number $2357$ is :

A. $2EE$ B. $2FF$ C. $4EF$ D. $4FE$

ugcnetjan2017ii digital-logic number-system

Answer key

### 6.20.3 Number System: UGC NET CSE | January 2017 | Part 2 | Question: 15 top

If $X$ is a binary number which is power of $2$, then the value of $X \& (X-1)$ is :

A. $11\ldots11$ B. $00\ldots00$ C. $100\ldots0$ D. $000\ldots1$

ugcnetjan2017ii digital-logic number-system

Answer key

### 6.20.4 Number System: UGC NET CSE | January 2017 | Part 2 | Question: 9 top

Convert the octal number $0.4051$ into its equivalent decimal number.

A. $0.5100098$ B. $0.2096$ C. $0.52$ D. $0.4192$

ugcnetjan2017ii digital-logic number-system

Answer key

### 6.20.5 Number System: UGC NET CSE | June 2019 | Part 2 | Question: 18 top

Consider the equation $(146)_b + (313)_{b-2} = (246)_8$. Which of the following is the value of $b$?

A. $8$ B. $7$ C. $10$ D. $16$

ugcnetcse-june2019-paper2 number-system

Answer key

### 6.20.6 Number System: UGC NET CSE | Junet 2015 | Part 3 | Question: 4 top

The equivalent hexadecimal notation for octal number 2550276 is

A. FADED B. AEOBE C. ADOBE D. ACABE

ugcnetcse-june2015-paper3 digital-logic number-system

Answer key

## 6.21 Number Theory (1) top

### 6.21.1 Number Theory: UGC NET CSE | June 2010 | Part 2 | Question: 9 top

What is decimal equivalent of BCD $11011.1100$?

A. $22.0$ B. $22.2$ C. $20.2$ D. $21.2$

ugcnetcse-june2010-paper2 digital-logic number-theory

Answer key

## 6.22 Priority Encoder (1) top

### 6.22.1 Priority Encoder: UGC NET CSE | June 2019 | Part 2 | Question: 17 top

The parallel bus arbitration technique uses an external priority encoder and a decoder. Suppose, a parallel arbiter has $5$ bus arbiters. What will be the size of priority encoder and decoder respectively?

A. $4 \times 2$, $2 \times 4$
B. $2 \times 4$, $4 \times 2$
C. $3 \times 8$, $8 \times 3$
D. $8 \times 3$, $3 \times 8$

ugcnetcse-june2019-paper2 priority-encoder

Answer key

## 6.23 Ripple Counter Operation (3) top

### 6.23.1 Ripple Counter Operation: UGC NET CSE | August 2016 | Part 3 | Question: 1 top

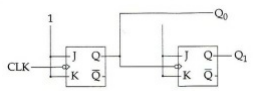
A ripple counter is a $(n)$ :

A. Synchronous Counter
B. Asynchronous counter
C. Parallel counter
D. None of the above

ugcnetcse-aug2016-paper3 digital-logic ripple-counter-operation

### 6.23.2 Ripple Counter Operation: UGC NET CSE | July 2018 | Part 2 | Question: 94 top

What does the following logic diagram represent?




A. Synchronous Counter
B. Ripple Counter
C. Combinational Circuit
D. Mod 2 Counter

ugcnetcse-july2018-paper2 digital-logic ripple-counter-operation

Answer key

### 6.23.3 Ripple Counter Operation: UGC NET CSE | September 2013 | Part 3 | Question: 36 top

A binary ripple counter is required to count up to 16383. How many flip-flops are required?

A. 16382 B. 8191 C. 512 D. 14

ugcnetcse-sep2013-paper3 digital-logic ripple-counter-operation

Answer key

## 6.24 Rom (1) top

### 6.24.1 Rom: UGC NET CSE | December 2014 | Part 2 | Question: 10 top

The size of the $ROM$ required to build an 8-bit adder / subtractor with mode control, carry input, carry output and two's complement overflow output is given as

A. $2^{16} \times 8$
B. $2^{18} \times 10$
C. $2^{16} \times 10$
D. $2^{18} \times 8$

ugcnetcse-dec2014-paper2 digital-logic rom

Answer key

## 6.25 Sequential Circuit (6) top

### 6.25.1 Sequential Circuit: UGC NET CSE | June 2009 | Part 2 | Question: 14 top

A reduced state table has $18$ rows. The minimum number of Flip-flops needed to implement the sequential machine is :

A. $18$
B. $9$
C. $5$
D. $4$

ugcnetcse-june2009-paper2 digital-logic sequential-circuit

Answer key

### 6.25.2 Sequential Circuit: UGC NET CSE | June 2010 | Part 2 | Question: 7 top

Advantage of synchronous sequential circuits over asynchronous ones is

A. Faster operation
B. Ease of avoiding problems due to hazard
C. Lower hardware requirement
D. Better noise immunity

ugcnetcse-june2010-paper2 digital-logic sequential-circuit

Answer key

### 6.25.3 Sequential Circuit: UGC NET CSE | June 2014 | Part 3 | Question: 42 top

The output of a sequential circuit depends on

A. Present input only
B. Past input only
C. Both present and past input
D. Past output only

ugcnetjune2014iii digital-logic sequential-circuit

Answer key

### 6.25.4 Sequential Circuit: UGC NET CSE | June 2014 | Part 3 | Question: 44 top

Which of the following flip-flops is free from race condition ?

A. $T$ flip-flop
B. $SR$ flip-flop
C. Master-slave $JK$ flip-flop
D. None of the above

ugcnetjune2014iii digital-logic sequential-circuit flip-flop

Answer key

### 6.25.5 Sequential Circuit: UGC NET CSE | June 2016 | Part 3 | Question: 1 top

Which of the following is a sequential circuit?

A. Multiplexer
B. Decoder
C. Full adder
D. Counter

ugcnetcse-june2016-paper3 digital-logic sequential-circuit

Answer key

### 6.25.6 Sequential Circuit: UGC NET CSE | Junet 2015 | Part 3 | Question: 6 top

The number of flip-flops required to design a modulo -272 counter is

A. 8 B. 9 C. 27 D. 11

ugcnetcse-june2015-paper3 digital-logic sequential-circuit flip-flop

Answer key

## 6.26 Sum Of Product (1) top

### 6.26.1 Sum Of Product: UGC NET CSE | December 2013 | Part 2 | Question: 33 top

The sum of products expansion for the function $F(x, y, z) = (x + y)\overline{z}$ is given as

A. $\overline{x}\ \overline{y}z + xy\overline{z} + \overline{x}y\overline{z}$
B. $xyz + xy\overline{z} + x\overline{y}\ \overline{z}$
C. $x\overline{y}\ \overline{z} + \overline{x}\ \overline{y}\ \overline{z} + xy\overline{z}$
D. $xy\overline{z} + x\overline{y}\ \overline{z} + \overline{x}y\overline{z}$

ugcnetcse-dec2013-paper2 digital-logic sum-of-product

Answer key

## 6.27 Unix (1) top

### 6.27.1 Unix: UGC NET CSE | December 2015 | Part 3 | Question: 40 top

In Unix operating system, special files are used to

A. buffer data received in its input from where a process reads
B. provide a mechanism to map physical device to file names
C. store list of file names plus pointers associated with i-nodes
D. store information entered by a user application program or utility program

ugcnetcse-dec2015-paper3 unix

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 6.0.1 | C | 6.0.2 | Q-Q | 6.0.3 | Q-Q | 6.0.4 | Q-Q | 6.0.5 | Q-Q |
| 6.0.6 | Q-Q | 6.0.7 | Q-Q | 6.0.8 | Q-Q | 6.0.9 | D | 6.0.10 | Q-Q |
| 6.0.11 | C | 6.0.12 | A | 6.0.13 | C | 6.0.14 | Q-Q | 6.0.15 | C |
| 6.0.16 | A | 6.0.17 | C | 6.0.18 | C | 6.0.19 | A | 6.0.20 | A |
| 6.0.21 | Q-Q | 6.1.1 | Q-Q | 6.1.2 | D | 6.1.3 | D | 6.2.1 | Q-Q |
| 6.2.2 | Q-Q | 6.2.3 | C | 6.2.4 | D | 6.2.5 | D | 6.2.6 | D |
| 6.2.7 | D | 6.2.8 | D | 6.3.1 | A | 6.4.1 | A;D | 6.5.1 | Q-Q |
| 6.5.2 | Q-Q | 6.5.3 | Q-Q | 6.6.1 | Q-Q | 6.6.2 | Q-Q | 6.6.3 | Q-Q |
| 6.6.4 | Q-Q | 6.6.5 | A | 6.6.6 | A | 6.6.7 | B;D | 6.6.8 | B |
| 6.6.9 | Q-Q | 6.6.10 | Q-Q | 6.6.11 | C | 6.7.1 | B | 6.8.1 | Q-Q |
| 6.8.2 | C | 6.9.1 | B | 6.10.1 | A OR C | 6.11.1 | Q-Q | 6.11.2 | Q-Q |
| 6.11.3 | D | 6.11.4 | Q-Q | 6.11.5 | D | 6.11.6 | D | 6.11.7 | X |
| 6.12.1 | D | 6.12.2 | Q-Q | 6.13.1 | A | 6.14.1 | D | 6.14.2 | C |
| 6.15.1 | Q-Q | 6.15.2 | Q-Q | 6.15.3 | Q-Q | 6.16.1 | B | 6.17.1 | Q-Q |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 6.18.1 | Q-Q | 6.18.2 | Q-Q | 6.18.3 | A | 6.18.4 | B | 6.19.1 | Q-Q |
| 6.19.2 | Q-Q | 6.19.3 | Q-Q | 6.19.4 | Q-Q | 6.19.5 | Q-Q | 6.19.6 | Q-Q |
| 6.19.7 | Q-Q | 6.19.8 | Q-Q | 6.19.9 | Q-Q | 6.19.10 | B | 6.19.11 | C |
| 6.19.12 | B | 6.20.1 | D | 6.20.2 | C | 6.20.3 | B | 6.20.4 | A |
| 6.20.5 | B | 6.20.6 | C | 6.21.1 | Q-Q | 6.22.1 | D | 6.23.1 | Q-Q |
| 6.23.2 | Q-Q | 6.23.3 | D | 6.24.1 | B | 6.25.1 | Q-Q | 6.25.2 | Q-Q |
| 6.25.3 | C | 6.25.4 | C | 6.25.5 | C | 6.25.6 | B | 6.26.1 | D |
| 6.27.1 | D | | | | | | | | |

### 7.0.1 UGC NET CSE | December 2012 | Part 3 | Question: 25 top

The number of distinct bracelets of five beads made up of red, blue and green beads (two bracelets are indistinguishable if the rotation of one yield another) is,

A. 243 B. 81 C. 51 D. 47

ugcnetcse-dec2012-paper3

Answer key

### 7.0.2 UGC NET CSE | June 2014 | Part 2 | Question: 25 top

How many cards must be chosen from a deck to guarantee that at least

i. two aces of two kinds are chosen.
ii. two aces are chosen.
iii. two cards of the same kind are chosen.
iv. two cards of two different kinds are chosen.

A. $50, 50, 14, 5$
B. $51, 51, 15, 7$
C. $52, 52, 14, 5$
D. $51, 51, 14, 5$

ugcnetcse-june2014-paper2 combinatory

Answer key

### 7.0.3 UGC NET CSE | December 2012 | Part 3 | Question: 20 top

The number of ways to distribute n distinguishable objects into k distinguishable boxes, so that $n_i$ objects are placed into box $i$, $i = 1, 2, \ldots k$ equals which of the following?

A. $\frac{n!}{n_1!+n_2!+\cdots+n_k!}$
B. $\frac{n_1!+n_2!+\cdots+n_k!}{n_1!n_2!\ldots n_k!}$
C. $\frac{n_1!}{n_1!n_2!\ldots n_k!}$
D. $\frac{n_1!n_2!\ldots n_k!}{n_1!-n_2!-n_3!\cdots-n_k!}$

ugcnetcse-dec2012-paper3 discrete-mathematics combinatory

Answer key

### 7.0.4 UGC NET CSE | December 2012 | Part 3 | Question: 29 top

$58$ lamps are to be connected to a single electric outlet by using an extension board each of which has four outlets. The number of extension boards needed to connect all the light is

A. $28$ B. $29$ C. $20$ D. $19$

ugcnetcse-dec2012-paper3 combinatory

Answer key

### 7.0.5 UGC NET CSE | December 2013 | Part 2 | Question: 38 top

If n and r are non-negative integers and n $\geq$ r, then p(n+1, r) equals to

A. $\frac{P(n,r)(n+1)}{(n+1-r)}$
B. $\frac{P(n,r)(n+1)}{(n-1+r)}$
C. $\frac{P(n,r)(n-1)}{(n+1-r)}$
D. $\frac{P(n,r)(n+1)}{(n+1+r)}$

ugcnetcse-dec2013-paper2 discrete-mathematics combinatory

Answer key

### 7.0.6 UGC NET CSE | December 2015 | Part 2 | Question: 1 top

How many committees of five people can be chosen from 20 men and 12 women such that each committee contains at least three women

A. 75240 B. 52492 C. 41800 D. 9900

combinatory ugcnetcse-dec2015-paper2

Answer key

### 7.0.7 UGC NET CSE | October 2020 | Part 2 | Question: 2 top

How many ways are there to pack six copies of the same book into four identical boxes, where a box can contain as many as six books?

A. $4$ B. $6$ C. $7$ D. $9$

ugcnetcse-oct2020-paper2 discrete-mathematics combinatory

Answer key

### 7.0.8 UGC NET CSE | June 2019 | Part 2 | Question: 2 top

How many ways are there to place $8$ indistinguishable balls into four distinguishable bins?

A. $70$ B. $165$ C. ${}^{8}C_{4}$ D. ${}^{8}P_{4}$

ugcnetcse-june2019-paper2 combinatory

Answer key

## 7.1 Binary Tree (1) top

### 7.1.1 Binary Tree: UGC NET CSE | June 2016 | Part 3 | Question: 31 top

The number of different binary trees with 6 nodes is

A. 6 B. 42 C. 132 D. 256

ugcnetcse-june2016-paper3 combinatory binary-tree

Answer key

## 7.2 Counting (3) top

### 7.2.1 Counting: UGC NET CSE | December 2018 | Part 2 | Question: 33 top

The number of substrings that can be formed from string given by

$adefbghnmp$

is

A. $10$ B. $45$ C. $55$ D. $56$

ugcnetcse-dec2018-paper2 combinatory counting

Answer key

### 7.2.2 Counting: UGC NET CSE | Junet 2015 | Part 2 | Question: 1 top

How many strings of $5$ digits have the property that the sum of their digits is $7$?

A. $66$ B. $330$ C. $495$ D. $99$

ugcnetcse-june2015-paper2 discrete-mathematics counting

Answer key

### 7.2.3 Counting: UGC NET CSE | Junet 2015 | Part 2 | Question: 3 top

In how many ways can $15$ indistinguishable fish be placed into $5$ different ponds, so that each pond contains at least one fish?

A. $1001$ B. $3876$ C. $775$ D. $200$

ugcnetcse-june2015-paper2 combinatory counting

Answer key

## 7.3 Euler Phi Function (1) top

### 7.3.1 Euler Phi Function: UGC NET CSE | June 2019 | Part 2 | Question: 63 top

Consider the Euler's phi function given by

$$\phi(n) = n \prod_{p/n} \left(1 - \frac{1}{p}\right)$$

where $p$ runs over all the primes dividing $n$. What is the value of $\phi(45)$?

A. $3$ B. $12$ C. $6$ D. $24$

ugcnetcse-june2019-paper2 euler-phi-function

Answer key

## 7.4 Inclusion Exclusion (1) top

### 7.4.1 Inclusion Exclusion: UGC NET CSE | June 2019 | Part 2 | Question: 3 top

How many bit strings of length ten either start with a $1$ bit or end with two bits $00$ ?

A. $320$ B. $480$ C. $640$ D. $768$

ugcnetcse-june2019-paper2 combinatory inclusion-exclusion

Answer key

## 7.5 Parenthesization (1) top

### 7.5.1 Parenthesization: UGC NET CSE | June 2016 | Part 2 | Question: 25 top

In how many ways can the string $A \cap B - A \cap B - A$ be fully paranthesized to yield an infix expression?

A. 15 B. 14 C. 13 D. 12

ugcnetcse-june2016-paper2 parenthesization combinatory

Answer key

## 7.6 Pigeonhole Principle (1) top

### 7.6.1 Pigeonhole Principle: UGC NET CSE | June 2019 | Part 2 | Question: 7 top

How many cards must be selected from a standard deck of $52$ cards to guarantee that at least three hearts are present among them?

A. $9$ B. $13$ C. $17$ D. $42$

ugcnetcse-june2019-paper2 combinatory pigeonhole-principle

Answer key

## 7.7 Recurrence Relation (1) top

### 7.7.1 Recurrence Relation: UGC NET CSE | December 2012 | Part 2 | Question: 10 top

The number of bit strings of length eight that will either start with a 1 bit and end with two bits 00 shall be

A. 32 B. 64 C. 128 D. 160

ugcnetcse-dec2012-paper2 combinatory recurrence-relation

Answer key

# Answer Keys

| | |
|---|---|
| 7.0.1 | C |
| 7.0.6 | B |
| 7.2.2 | B |
| 7.6.1 | D |

| | |
|---|---|
| 7.0.2 | A |
| 7.0.7 | D |
| 7.2.3 | A |
| 7.7.1 | D |

| | |
|---|---|
| 7.0.3 | C |
| 7.0.8 | B |
| 7.3.1 | D |

| | |
|---|---|
| 7.0.4 | D |
| 7.1.1 | C |
| 7.4.1 | C |

| | |
|---|---|
| 7.0.5 | A |
| 7.2.1 | D |
| 7.5.1 | B |

### 8.0.1 UGC NET CSE | December 2007 | Part 2 | Question: 2 top

The number of edges in a complete graph with '$n'$ vertices is equal to :

A. $n(n-1)$ B. $\frac{n(n-1)}{2}$ C. $n^2$ D. $2n-1$

ugcnetcse-dec2007-paper2

Answer key

### 8.0.2 UGC NET CSE | December 2004 | Part 2 | Question: 23 top

Weighted graph :

A. Is a bi-directional graph
B. Is directed graph
C. Is graph in which number associated with arc
D. Eliminates table method

ugcnetcse-dec2004-paper2

Answer key

### 8.0.3 UGC NET CSE | December 2015 | Part 2 | Question: 2 top

Which of the following statement(s) is/are false?

a. A connected multigraph has an Euler circuit if and only if each vertex of G has even degree.
b. A connected multigraph has an Euler path but not an Euler circuit if and only if it has exactly two vertices of odd degree.
c. A simple graph G with n vertices is a bipartite graph if and only if it is 2-colorable.
d. A simple graph G with n vertices has a Hamilton circuit if and only if $\deg(v) \geq n/2$ for each vertex of G.

Codes :

A. a only B. b and c C. c only D. d only

graph-theory ugcnetcse-dec2015-paper2

Answer key

### 8.0.4 UGC NET CSE | Junet 2015 | Part 2 | Question: 5 top

Consider a Hamiltonian Graph(G) with no loops and parallel edges. Which of the following is true with respect to this graph (G)?

a. $\deg(v) \geq n/2$ for each vertex of G
b. $|E(G)| \geq 1/2(n-1)(\deg(v)+1)$
c. $\deg(v) + \deg(w) \geq n$ for every $v$ and $w$ not connected by an edge

A. $a$ and $b$ B. $b$ and $c$ C. $a$ and $c$ D. $a$, $b$, and $c$

ugcnetcse-june2015-paper2 discrete-mathematics graph-theory

Answer key

### 8.0.5 UGC NET CSE | December 2013 | Part 3 | Question: 39 top

A ____ complete subgraph and a _____ subset of vertices of a graph G=(V,E) are a clique and a vertex cover respectively

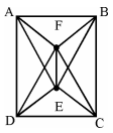
A. minimal, maximal
B. minimal, minimal
C. maximal, minimal
D. maximal, maximal

ugcnetcse-dec2013-paper3 engineering-mathematics discrete-mathematics graph-theory

Answer key

### 8.0.6 UGC NET CSE | December 2014 | Part 2 | Question: 03 top

Consider the Graph shown below :




This graph is a _____.

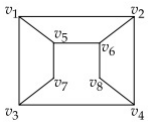
A. Complete Graph
B. Bipartite Graph
C. Hamiltonian Graph
D. All of the above

ugcnetcse-dec2014-paper2 graph-theory

Answer key

### 8.0.7 UGC NET CSE | December 2015 | Part 2 | Question: 4 top

Consider the graph given below:




The two distinct set of vertices, which make the graph bipartite are

A. $(v_1, v_4, v_6); (v_2, v_3, v_5, v_7, v_8)$
B. $(v_1, v_7, v_8); (v_2, v_3, v_5, v_6)$
C. $(v_1, v_4, v_6, v_7); (v_2, v_3, v_5, v_8)$
D. $(v_1, v_4, v_6, v_7, v_8); (v_2, v_3, v_5)$

ugcnetcse-dec2015-paper2 graph-theory

Answer key

### 8.0.8 UGC NET CSE | June 2013 | Part 2 | Question: 45 top

When a mobile telephone physically moves from one to another cell, the base station transfers ownership to the cell getting strongest signal. This process is known as

A. handoff
B. mobile switching
C. mobile routing
D. cell switching

ugcnetcse-june2013-paper2

Answer key

### 8.0.9 UGC NET CSE | June 2013 | Part 2 | Question: 5 top

Cyclometric complexity of a flow graph G with n vertices and e edges is

A. V(G) = e+n-2
B. V(G) = e-n+2
C. V(G) = e+n+2
D. V(G) = e-n-2

ugcnetcse-june2013-paper2 graph-theory

Answer key

### 8.0.10 UGC NET CSE | June 2014 | Part 3 | Question: 65 top

Given the following statements :

$S_1$ : The subgraph-isomorphism problem takes two graphs $G_1$ and $G_2$ and asks whether $G_1$ is a subgraph of $G_2$ .

$S_2$ : The set-partition problem takes as input a set $S$ of numbers and asks whether the numbers can be partitioned into two sets $A$ and $\bar{A} = S - A$ such that

$$\sum_{x \in A} x = \sum_{x \in \bar{A}} x$$

Which of the following is true ?

A. $S_1$ is $NP$ problem and $S_2$ is $P$ problem.
B. $S_1$ is $NP$ problem and $S_2$ is $NP$ problem.
C. $S_1$ is $P$ problem and $S_2$ is $P$ problem.
D. $S_1$ is $P$ problem and $S_2$ is $NP$ problem.

ugcnetjune2014iii graph-theory

Answer key

## 8.0.11 UGC NET CSE | June 2013 | Part 2 | Question: 37 top

1. Which of the following connected graph has exactly one spanning tree?

A. Complete graph
B. Hamiltonian graph
C. Euler graph
D. None of the above

graph-theory ugcnetcse-june2013-paper2

Answer key

## 8.0.12 UGC NET CSE | June 2013 | Part 2 | Question: 43 top

Which one of the following is decimal value of a signed binary number 1101010, if it is in 2's complement form?

A. -42
B. -22
C. -21
D. -106

ugcnetcse-june2013-paper2

Answer key

## 8.0.13 UGC NET CSE | December 2008 | Part 2 | Question: 2 top

The graph K3,4 has:

A. $3$ edges
B. $4$ edges
C. $7$ edges
D. $12$ edges

ugcnetcse-dec2008-paper2 graph-theory

Answer key

## 8.0.14 UGC NET CSE | December 2006 | Part 2 | Question: 3 top

The number of edges in a complete graph with $N$ vertices is equal to :

A. $N(N-1)$
B. $2N-1$
C. $N-1$
D. $N(N-1)/2$

ugcnetcse-dec2006-paper2

Answer key

## 8.0.15 UGC NET CSE | December 2004 | Part 2 | Question: 4 top

The following lists are the degrees of all the vertices of a graph :

i. $1, 2, 3, 4, 5$
ii. $3, 4, 5, 6, 7$
iii. $1, 4, 5, 8, 6$
iv. $3, 4, 5, 6$

A. (i) and (ii)
B. (iii) and (iv)
C. (iii) and (ii)
D. (ii) and (iv)

ugcnetcse-dec2004-paper2

Answer key

## 8.0.16 UGC NET CSE | June 2013 | Part 2 | Question: 38 top

How many edges must be removed to produce the spanning forest of a graph with N vertices, M edges and C connected components?

A. M+N-C
B. M-N-C
C. M-N+C
D. M+N+C

ugcnetcse-june2013-paper2

Answer key

## 8.0.17 UGC NET CSE | June 2009 | Part 2 | Question: 23 top

Which two of the following are equivalent for an undirected graph G ?

(i) G is a tree

(ii) There is at least one path between any two distinct vertices of G

(iii) G contains no cycles and has (n-1) edges

(iv) G has n edges

A. (i) and (ii)
B. (i) and (iii)
C. (i) and (iv)
D. (ii) and (iii)

ugcnetcse-june2009-paper2

Answer key

## 8.0.18 UGC NET CSE | June 2019 | Part 2 | Question: 5 top

For which values of $m$ and $n$ does the complete bipartite graph $k_{m,n}$ have a Hamiltonian circuit ?

A. $m \neq n,\ m,n \geq 2$
B. $m \neq n,\ m,n \geq 3$
C. $m = n,\ m,n \geq 2$
D. $m = n,\ m,n \geq 3$

ugcnetcse-june2019-paper2 graph-theory

Answer key

## 8.0.19 UGC NET CSE | July 2018 | Part 2 | Question: 81 top

E is the number of edges in the graph and f is maximum flow in the graph. When the capacities are integers, the runtime of Ford-Fulberson algorithm is bounded by

A. $O(E * f)$
B. $O(E^2 * f)$
C. $O(E * f^2)$
D. $O(E^2 * f^2)$

ugcnetcse-july2018-paper2 graph-theory

Answer key

## 8.0.20 UGC NET CSE | December 2009 | Part 2 | Question: 02 top

Circle has _____

(A) No vertices

(B) Only 1 vertex

(C) ∞ vertices

(D) None of these

ugcnetcse-dec2009-paper2 graph-theory

Answer key

## 8.0.21 UGC NET CSE | December 2009 | Part 2 | Question: 22 top

The number of edges in a complete graph of n vertices is

(A) n

(B) n(n – 1)/2

(C) n(n + 1)/2

(D) (n^2)/2

ugcnetcse-dec2009-paper2 graph-theory

Answer key

### 8.0.22 UGC NET CSE | June 2008 | Part 2 | Question: 4 top

**The set of positive integers under the operation of ordinary multiplication is:**

**(A) not a monoid** **(B) not a group**

**(C) a group** **(D) an Abelian group**

ugcnetcse-june2008-paper2

Answer key

### 8.0.23 UGC NET CSE | June 2009 | Part 2 | Question: 12 top

The complete graph with four vertices has $k$ edges where $k$ is :

A. $3$
B. $4$
C. $5$
D. $6$

ugcnetcse-june2009-paper2

Answer key

## 8.1 Binary Tree (1) top

### 8.1.1 Binary Tree: UGC NET CSE | November 2017 | Part 3 | Question: 31 top

Consider a full binary tree with $n$ internal nodes, internal path length $I$, and external path length $e$. the internal length of a full binary tree is the sum, taken over all nodes of the tree, of the depth of each node. Similarly, the external path length is the sum, taken over all leaves of the tree, of the depth of each leaf.

Which of the following is **correct** for the full binary tree?

A. $e = i + n$ B. $e = i + 2n$ C. $e = 2i + n$ D. $e = 2n + i$

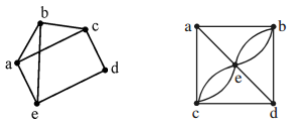
ugcnetcse-nov2017-paper3 data-structures binary-tree

Answer key

## 8.2 Euler Graph (2) top

### 8.2.1 Euler Graph: UGC NET CSE | August 2016 | Part 2 | Question: 5 top

Given the following graphs :




$(G_1)$ $(G_2)$

Which of the following is correct ?

A. $G_1$ contains Euler circuit and $(G_2)$ does not contain Euler circuit.
B. $(G_1)$ does not contain Euler circuit and $(G_2)$ contains Euler circuit.
C. Both $(G_1)$ and $(G_2)$ do not contain Euler circuit.
D. Both $(G_1)$ and $(G_2)$ contain Euler circuit.

ugcnetcse-aug2016-paper2 graph-theory euler-graph

Answer key

### 8.2.2 Euler Graph: UGC NET CSE | December 2010 | Part 2 | Question: 2 top

An undirected graph possesses an eulerian circuit if and only if it is connected and its vertices are

A. All of even degree
B. All of odd degree
C. Of any degree
D. Even in number

ugcnetcse-dec2010-paper2 graph-theory euler-graph

Answer key

## 8.3 Flow Network (1) top

### 8.3.1 Flow Network: UGC NET CSE | June 2019 | Part 2 | Question: 69 top

Consider the following properties with respect to a flow network $G = (V, E)$ in which a flow is a real-valued function $f : V \times V \to R$:

$P_1$: For all $u, v, \in V,\ f(u, v) = -f(v, u)$

$P_2$: $\sum_{v \in V} f(u, v) = 0$ for all $u \in V$

Which one of the following is/are correct?

A. Only $P_1$
B. Only $P_2$
C. Both $P_1$ and $P_2$
D. Neither $P_1$ nor $P_2$

ugcnetcse-june2019-paper2 flow-network

Answer key

## 8.4 Graph Coloring (3) top

### 8.4.1 Graph Coloring: UGC NET CSE | January 2017 | Part 2 | Question: 5 top

Consider a Hamiltonian Graph $G$ with no loops or parallel edges and with $|V(G)| = n \geq 3$. The which of the following is true?

A. $\deg(v) \geq \frac{n}{2}$ for each vertex $v$

B. $|E(G)| \geq \frac{1}{2}(n-1)(n-2) + 2$

C. $\deg(v) + \deg(w) \geq n$ whenever $v$ and $w$ are not connected by an edge
D. All of the above

ugcnetjan2017ii graph-theory graph-coloring

Answer key

### 8.4.2 Graph Coloring: UGC NET CSE | June 2010 | Part 2 | Question: 4 top

$S_1$ : I teach algorithms and maths.

$S_2$ : My professor teaches maths, electronics and computer science.

$S_3$ : I have a student of maths.

$S_4$ : Algorithm is a part of computer science.

$S_5$ : Maths students know computer science.

What would be the chromatic number of a graph, vertices of which are the actors/entities that are involved in the sentences $S_1$ to $S_5$ and edges to represent the associations/relationships amongst the entities/actors as expressed in the sentences $S_1$ to $S_5$ above ?

A. $2$
B. $3$
C. $4$
D. None of these

ugcnetcse-june2010-paper2 graph-coloring

Answer key

### 8.4.3 Graph Coloring: UGC NET CSE | June 2012 | Part 2 | Question: 4 top

The number of colours required to properly colour the vertices of every planer graph is

A. 2 B. 3 C. 4 D. 5

ugcnetcse-june2012-paper2 graph-theory graph-coloring

Answer key

## 8.5 Graph Connectivity (7) top

### 8.5.1 Graph Connectivity: UGC NET CSE | August 2016 | Part 2 | Question: 22 top

Consider an undirected graph $G$ where self-loops are not allowed. The vertex set of $G$ is $(i,j)|1 \leq i \leq 12, 1 \leq j \leq 12$. There is an edge between $(a,b)$ and $(c,d)$ if $|a-c| \leq 1$ or $|b-d| \leq 1$. The number of edges in this graph is

A. $726$ B. $796$ C. $506$ D. $616$

ugcnetcse-aug2016-paper2 graph-theory graph-connectivity

Answer key

### 8.5.2 Graph Connectivity: UGC NET CSE | December 2010 | Part 2 | Question: 4 top

The minimum number of edges in a connected graph with '$n'$ vertices is equal to

A. $n(n-1)$ B. $\frac{n(n-1)}{2}$ C. $n^2$ D. $n-1$

ugcnetcse-dec2010-paper2 graph-theory graph-connectivity

Answer key

### 8.5.3 Graph Connectivity: UGC NET CSE | December 2011 | Part 2 | Question: 15 top

McCabe's cyclomatic metric $V(G)$ of a graph $G$ with $n$ vertices, $e$ edges and $p$ connected component is

A. $e$ B. $n$ C. $e-n+p$ D. $e-n+2p$

ugcnetcse-dec2011-paper2 graph-theory graph-connectivity

Answer key

### 8.5.4 Graph Connectivity: UGC NET CSE | December 2011 | Part 2 | Question: 5 top

Maximum number of edges in a n -Node undirected graph without self loop is

A. $n^2$
B. $n(n-1)$
C. $n(n+1)$
D. $\frac{n(n-1)}{2}$

ugcnetcse-dec2011-paper2 graph-theory graph-connectivity

Answer key

### 8.5.5 Graph Connectivity: UGC NET CSE | June 2013 | Part 3 | Question: 15 top

A vertex cover of an undirected graph $G(V,E)$ is a subset $V_1 \subseteq V$ vertices such that

A. Each pair of vertices in $V_1$ is connected by an edge
B. If $(u,v) \in E$ then $u \in V_1$ and $v \in V_1$
C. If $(u,v) \in E$ then $u \in V_1$ or $v \in V_1$
D. All pair of vertices in $V_1$ are not connected by an edge

ugcnetcse-june2013-paper3 graph-theory graph-connectivity

Answer key

### 8.5.6 Graph Connectivity: UGC NET CSE | September 2013 | Part 2 | Question: 22 top

A simple graph G with n vertices is connected if the graph has

A. (n-1)(n-2)/2 edges
B. more than (n-1) (n-2)/2 edges
C. less than (n-1) (n-2)/2 edges
D. $\Sigma_{i=1}^{k} C(n_i, 2)$ edges

ugcnetsep2013ii graph-theory graph-connectivity

Answer key

### 8.5.7 Graph Connectivity: UGC NET CSE | September 2013 | Part 2 | Question: 8 top

Consider an undirected graph G with 100 nodes. The maximum number of edges to be included in G so that the graph is not connected is

A. 2451 B. 4950 C. 4851 D. 9900

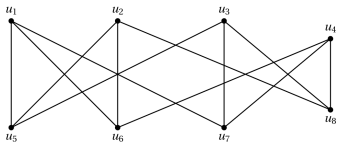
ugcnetsep2013ii graph-theory graph-connectivity

Answer key

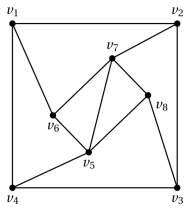
## 8.6 Graph Isomorphism (1) top

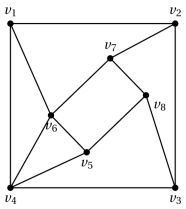
### 8.6.1 Graph Isomorphism: UGC NET CSE | June 2014 | Part 2 | Question: 21 top

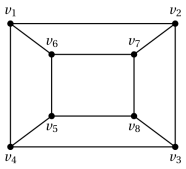
Consider the graph given below as :

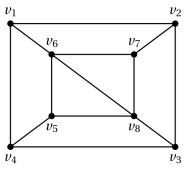



Which one of the following graph is isomorphic to the above graph ?

A. 


B. 


C. 


D. 

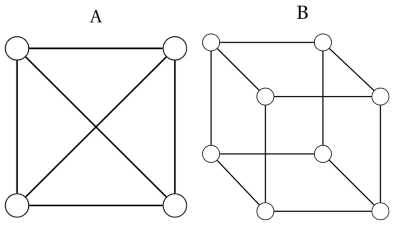

ugcnetcse-june2014-paper2 graph-theory non-gate graph-isomorphism

Answer key

## 8.7 Graph Planarity (2) top

### 8.7.1 Graph Planarity: UGC NET CSE | December 2012 | Part 3 | Question: 46 top

Two graphs A and B are shown below: Which one of the following statements is true?

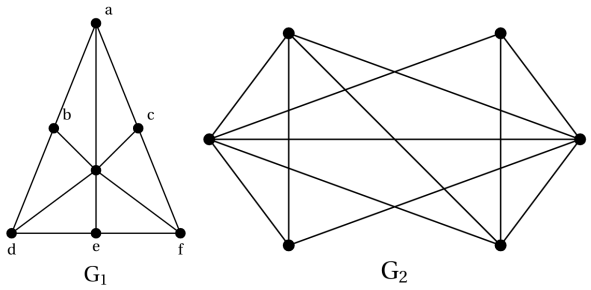



A. Both A and B are planar
B. Neither A nor B is planar
C. A is planar and B is not
D. B is planar and A is not

ugcnetcse-dec2012-paper3 graph-theory graph-planarity

Answer key

### 8.7.2 Graph Planarity: UGC NET CSE | June 2012 | Part 3 | Question: 72 top




$G_1$ and $G_2$ are two graphs as shown:

A. Both $G_1$ and $G_2$ are planar graphs
B. Both $G_1$ and $G_2$ are not planar graphs
C. $G_1$ is planar and $G_2$ is not planar
D. $G_1$ is not planar and $G_2$ is planar

ugcnetcse-june2012-paper3 graph-theory graph-planarity

Answer key

## 8.8 Hamiltonian Graph (1) top

### 8.8.1 Hamiltonian Graph: UGC NET CSE | June 2014 | Part 2 | Question: 23 top

Consider a complete bipartite graph $k_{m,n}$. For which values of $m$ and $n$ does this, complete graph have a Hamilton circuit

A. $m=3, n=2$
B. $m=2, n=3$
C. $m=n>2$
D. $m=n>3$

ugcnetcse-june2014-paper2 graph-theory hamiltonian-graph

Answer key

## 8.9 Handshaking Theorem (1) top

### 8.9.1 Handshaking Theorem: UGC NET CSE | June 2019 | Part 2 | Question: 4 top

Suppose that a connected planar graph has six vertices, each of degree four. Into how many regions is the plane divided by a planar representation of this graph?

A. $6$
B. $8$
C. $12$
D. $20$

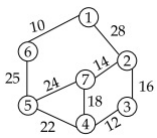
ugcnetcse-june2019-paper2 graph-planarity handshaking-theorem

Answer key

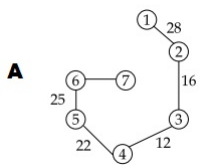
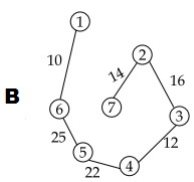
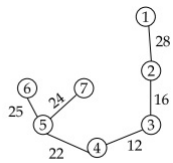
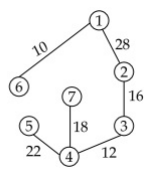
## 8.10 Minimum Spanning Tree (1) top

### 8.10.1 Minimum Spanning Tree: UGC NET CSE | Junet 2015 | Part 2 | Question: 21 top

Consider the given graph



Its Minimum Cost Spanning Tree is _____

A. 
B. 
C. 
D. 

ugcnetcse-june2015-paper2 graph-theory minimum-spanning-tree

Answer key

## 8.11 Non Planar (1) top

### 8.11.1 Non Planar: UGC NET CSE | December 2013 | Part 2 | Question: 39 top

A graph is non-planar if and only if it contains a subgraph homomorphic to

A. $K_{3,2}$ or $K_5$
B. $K_{3,3}$ or $K_6$
C. $K_{3,3}$ or $K_5$
D. $K_{2,3}$ or $K_5$

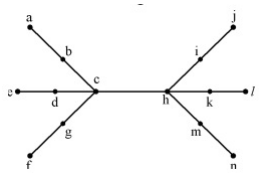
ugcnetcse-dec2013-paper2 graph-theory non-planar

Answer key

## 8.12 Tree (2) top

### 8.12.1 Tree: UGC NET CSE | December 2012 | Part 2 | Question: 33 top

Consider the tree given below:




Using the property of eccentricity of a vertex, find every vertex that is the centre of the given tree:

A. d & h
B. c & k
C. g, b, c, h, i, m
D. c & h

ugcnetcse-dec2012-paper2 graph-theory tree graph-connectivity

Answer key

### 8.12.2 Tree: UGC NET CSE | December 2013 | Part 2 | Question: 36 top

How many edges are there in a forest of t-trees containing a total of n vertices ?

A. n + t
B. n – t
C. n * t
D. $n^t$

ugcnetcse-dec2013-paper2 data-structures tree

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 8.0.1 | Q-Q | 8.0.2 | Q-Q | 8.0.3 | D | 8.0.4 | D | 8.0.5 | C |
| 8.0.6 | C | 8.0.7 | C | 8.0.8 | A | 8.0.9 | B | 8.0.10 | B |
| 8.0.11 | D | 8.0.12 | B | 8.0.13 | Q-Q | 8.0.14 | Q-Q | 8.0.15 | Q-Q |
| 8.0.16 | C | 8.0.17 | Q-Q | 8.0.18 | C | 8.0.19 | Q-Q | 8.0.20 | Q-Q |
| 8.0.21 | Q-Q | 8.0.22 | Q-Q | 8.0.23 | Q-Q | 8.1.1 | B | 8.2.1 | Q-Q |
| 8.2.2 | Q-Q | 8.3.1 | A | 8.4.1 | D | 8.4.2 | Q-Q | 8.4.3 | C |
| 8.5.1 | Q-Q | 8.5.2 | Q-Q | 8.5.3 | D | 8.5.4 | D | 8.5.5 | C |
| 8.5.6 | B | 8.5.7 | C | 8.6.1 | C | 8.7.1 | A | 8.7.2 | D |
| 8.8.1 | C | 8.9.1 | B | 8.10.1 | B | 8.11.1 | C | 8.12.1 | D |
| 8.12.2 | B | | | | | | | | |

### 9.0.1 UGC NET CSE | June 2013 | Part 2 | Question: 39 top

Which of the following shall be a compound proposition involving the propositions p, q and r, that is true when exactly two of the p, q and r are true and is false otherwise?

A. $(p \vee q \wedge \rceil r) \vee (p \wedge q \wedge r) \wedge (\rceil p \wedge q \vee r)$
B. $(p \wedge q \vee r) \wedge (p \wedge q \wedge r) \vee (\rceil q \wedge \rceil q \wedge \rceil r)$
C. $(p \wedge q \wedge \rceil r) \vee (p \wedge \rceil q \wedge r) \vee (\rceil p \wedge q \wedge r)$
D. $(p \vee r \wedge q) \vee (p \wedge q \wedge r) \vee (\rceil p \wedge q \wedge r)$

ugcnetcse-june2013-paper2

Answer key

### 9.0.2 UGC NET CSE | Junet 2015 | Part 3 | Question: 22 top

The casual form of the disjunctive normal form $\neg A \vee \neg B \vee \neg C \vee D$ is:

A. $A \wedge B \wedge C \Rightarrow D$
B. $A \vee B \vee C \vee D \Rightarrow true$
C. $A \wedge B \wedge C \wedge D \Rightarrow true$
D. $A \wedge B \wedge C \wedge D \Rightarrow false$

ugcnetcse-june2015-paper3 mathematical-logic

Answer key

### 9.0.3 UGC NET CSE | June 2013 | Part 2 | Question: 40 top

The truth value of the statements:

$\exists! x P(x) \rightarrow \exists x P(x)$ and $\exists! x \rceil P(x) \rightarrow \rceil \forall x P(x)$, (where the notation $\exists! x P(x)$ denotes the proposition "There exists a unique $x$ such that $P(x)$ is true") are:

A. True and False B. False and True C. False and False D. True and True

ugcnetcse-june2013-paper2

Answer key

### 9.0.4 UGC NET CSE | January 2017 | Part 2 | Question: 2 top

Match the following :

| | List – I | | List – II |
|---|---|---|---|
| a. | Absurd | i. | Clearly impossible being contrary to some evident truth. |
| b. | Ambiguous | ii. | Capable of more than one interpretation or meaning. |
| c. | Axiom | iii. | An assertion that is accepted and used without a proof. |
| d. | Conjecture | iv. | An opinion preferably based on some experience or wisdom. |

Codes:

| | $a$ | $b$ | $c$ | $d$ |
|---|---|---|---|---|
| $A.$ | $i$ | $ii$ | $iii$ | $iv$ |
| $B.$ | $i$ | $iii$ | $iv$ | $ii$ |
| $C.$ | $ii$ | $iii$ | $iv$ | $i$ |
| $D.$ | $ii$ | $i$ | $iii$ | $iv$ |

ugcnetjan2017ii mathematical-logic

Answer key

### 9.0.5 UGC NET CSE | September 2013 | Part 3 | Question: 67 top

The tracing model in Prolog describes program execution in terms of certain events. These events are

A. call and exit
B. call and fail
C. call, exit and redo
D. call, exit, redo and fail

ugcnetcse-sep2013-paper3

### 9.0.6 UGC NET CSE | June 2014 | Part 3 | Question: 32 top

_____ predicate calculus allows quantified variables to refer to objects in the domain of discourse and not to predicates or functions.

A. Zero-order
B. First-order
C. Second-order
D. High-order

ugcnetjune2014iii discrete-mathematics mathematical-logic

Answer key

### 9.0.7 UGC NET CSE | December 2018 | Part 2 | Question: 1 top

In mathematical logic, which of the following are statements?

i. There will be snow in January.
ii. What is the time now?
iii. Today is Sunday.
iv. You must study Discrete mathematics

Choose the correct answer from the code given below:

A. i and iii
B. i and ii
C. ii and iv
D. iii and iv

ugcnetcse-dec2018-paper2 mathematical-logic

Answer key

### 9.0.8 UGC NET CSE | December 2018 | Part 2 | Question: 2 top

Match List-I with List-II and choose the correct answer from the code given below :

| | **List I** | | **List II** |
|---|---|---|---|
| $(a)$ | $Equivalence$ | $(i)$ | $p \Rightarrow q$ |
| $(b)$ | $Contrapositive$ | $(ii)$ | $p \Rightarrow q; q \Rightarrow p$ |
| $(c)$ | $Converse$ | $(iii)$ | $p \Rightarrow q :\sim q \Rightarrow \sim p$ |
| $(d)$ | $Implication$ | $(iv)$ | $p \Leftrightarrow q$ |

A. (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)
B. (a)-(ii), (b)-(i), (c)-(iii), (d)-(iv)
C. (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)
D. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

ugcnetcse-dec2018-paper2 mathematical-logic

Answer key

### 9.0.9 UGC NET CSE | Junet 2015 | Part 2 | Question: 8 top

"If my computations are correct and I pay the electric bill, then I will run out of money. If I don't pay the electric bill, the power will be turned off. Therefore, If I don't run out of money and the power is still on then my computations are incorrect."

Convert this argument into logical notations using the variables $c, b, r, p$ for propositions of computations, electric bills, out of money and the power respectively. (Where $\neg$ means NOT).

A. $\text{if } (c \wedge b) \rightarrow r \text{ and } \neg b \rightarrow \neg p, \text{ then } (\neg r \wedge p) \rightarrow \neg c$
B. $\text{if } (c \vee b) \rightarrow r \text{and } \neg b \rightarrow \neg p, \text{ then } (r \wedge p) \rightarrow c$

C. if $(c \wedge b) \rightarrow r$ and $\neg p \rightarrow \neg b$, then $(\neg r \vee p) \rightarrow \neg c$
D. if $(c \vee b) \rightarrow r$ and $\neg b \rightarrow \neg p$, then $(\neg r \wedge p) \rightarrow \neg c$

ugcnetcse-june2015-paper2 mathematical-logic

Answer key

### 9.0.10 UGC NET CSE | November 2017 | Part 2 | Question: 8 top

Let $P$ and $Q$ be two propositions $\neg(P \leftrightarrow Q)$ is equivalent to

A. $P \leftrightarrow \neg Q$
B. $\neg P \leftrightarrow Q$
C. $\neg P \leftrightarrow \neg Q$
D. $Q \rightarrow P$

ugcnetcse-nov2017-paper2 discrete-mathematics mathematical-logic

Answer key

### 9.0.11 UGC NET CSE | June 2009 | Part 2 | Question: 25 top

The prepositional formula given by the tree :

is :

A. ∧∨x2∨x1¬x1¬x1
B. (x2∨¬x2)∧(x1∨x2)
C. (¬x1∨x2)∧(¬x1∨x2)
D. None

ugcnetcse-june2009-paper2

Answer key

### 9.0.12 UGC NET CSE | December 2014 | Part 3 | Question: 55 top

Equivalent logical expression for the Well Formed Formula $(WFF)$,

$\sim (\forall x) F[x]$

is

A. $\forall x(\sim F[x])$
B. $\sim (\exists x) F[x]$
C. $\exists x(\sim F[x])$
D. $\forall x F[x]$

ugcnetcse-dec2014-paper3 mathematical-logic

Answer key

### 9.0.13 UGC NET CSE | December 2015 | Part 2 | Question: 9 top

Consider the compund propositions given below as:

a. $p \vee \sim (p \wedge q)$
b. $(p \wedge \sim q) \vee \sim (p \wedge q)$
c. $p \wedge (q \vee r)$

Which of the above propositions are tautologies

A. a and c
B. b and c
C. a and b
D. a, b, and c

ugcnetcse-dec2015-paper2 mathematical-logic

Answer key

### 9.0.14 UGC NET CSE | December 2014 | Part 3 | Question: 57 top

The resolvent of the set of clauses $(A \vee B, \sim A \vee D, C \vee \sim B)$ is

A. $A \vee B$
B. $C \vee D$
C. $A \vee C$
D. $A \vee D$

ugcnetcse-dec2014-paper3 mathematical-logic

Answer key

## 9.1 First Order Logic (3) top

### 9.1.1 First Order Logic: UGC NET CSE | January 2017 | Part 3 | Question: 60 top

The first order logic (FOL) statement $((R \vee Q) \wedge (P \vee \neg Q))$ is equivalent to which of the following?

A. $((R \vee \neg Q) \wedge (P \vee \neg Q) \wedge (R \vee P))$
B. $((R \vee Q) \wedge (P \vee \neg Q) \wedge (R \vee P))$
C. $((R \vee Q) \wedge (P \vee \neg Q) \wedge (R \vee \neg P))$
D. $((R \vee Q) \wedge (P \vee \neg Q) \wedge (\neg R \vee P))$

ugcnetcse-jan2017-paper3 mathematical-logic first-order-logic

Answer key

### 9.1.2 First Order Logic: UGC NET CSE | June 2014 | Part 2 | Question: 19 top

The notation $\exists! x P(x)$ denotes the proposition "there exists a unique $x$ such that $P(x)$ is true". Give the truth values of the following statements :

I. $\exists! x P(x) \rightarrow \exists x P(x)$

II. $\exists! x \neg P(x) \rightarrow \neg \forall x P(x)$

A. Both $I$ & $II$ are true.
B. Both $I$ & $II$ are false.
C. $I$ - false, $II$ - true
D. $I$ - true, $II$ - false

ugcnetcse-june2014-paper2 mathematical-logic first-order-logic

Answer key

### 9.1.3 First Order Logic: UGC NET CSE | September 2013 | Part 3 | Question: 1 top

Which of the following is a correct predicate logic statement for "Every Natural number has one successor"?

A. $\forall x \exists y (succ(x, y) \wedge (\exists z\ succ(x, z) \Rightarrow equal(y, z)))$
B. $\forall x \exists y (succ(x, y) \vee (\exists z\ succ(x, z) \Rightarrow equal(y, z)))$
C. $\exists x \forall y (succ(x, y) \wedge (\exists z\ succ(x, z) \Rightarrow equal(y, z)))$
D. $\forall x \exists y (succ(x, y))$

first-order-logic ugcnetcse-sep2013-paper3

Answer key

## 9.2 Functions (1) top

### 9.2.1 Functions: UGC NET CSE | July 2018 | Part 2 | Question: 87 top

Match the following in **List-I** and **List-II**, for a function $f$ :

| | **List-I** | | **List-II** |
|---|---|---|---|
| (a) | $\forall x \forall y (f(x) = f(y) \rightarrow x = y)$ | (i) | Constant |
| (b) | $\forall y \exists x (f(x) = y)$ | (ii) | Injective |
| (c) | $\forall x\ f(x) = k$ | (iii) | Surjective |

**Code :**

A. (a)-(i), (b)-(ii), (c)-(iii)
B. (a)-(iii), (b)-(ii), (c)-(i)
C. (a)-(ii), (b)-(i), (c)-(iii)
D. (a)-(ii), (b)-(iii), (c)-(i)

ugcnetcse-july2018-paper2 discrete-mathematics functions

Answer key

## 9.3 Prolog (1) top

### 9.3.1 Prolog: UGC NET CSE | December 2015 | Part 3 | Question: 7 top

Given the following set of prolog clauses:

```
father(X,Y) :
```

```
parent(X,Y),
male(X),
parent(Sally, Bob),
parent(Jim, Bob),
parent(Alice, Jane),
male(Bob),
male(Jim),
female(Salley),
female(Alice)
```

How many atoms are matched to the variable 'X' before the query father(X, Jane) reports a Result?

A. $1$ B. $2$ C. $3$ D. $4$

ugcnetcse-dec2015-paper3 mathematical-logic prolog non-gate

Answer key

## 9.4 Propositional Logic (11) top

### 9.4.1 Propositional Logic: UGC NET CSE | December 2006 | Part 2 | Question: 2 top

The proposition ~ q ∨ p is equivalent to :

A. B. C. D.

2. The proposition ~q ∨ p is equivalent to :
(A) (B) (C) (D)

ugcnetcse-dec2006-paper2 mathematical-logic propositional-logic

Answer key

### 9.4.2 Propositional Logic: UGC NET CSE | December 2013 | Part 2 | Question: 34 top

Let P(m,n) be the statement "m divides n" where the universe of discourse for both the variable is the set of positive integers. Determine the truth values of each of the following propositions:

I. $\forall m \forall n P(m,n)$,
II. $\exists m \forall n P(m,n)$

A. Both I and II are true
B. Both I and II are false
C. I-false & II-true
D. I-true& II-false

ugcnetcse-dec2013-paper2 discrete-mathematics propositional-logic

Answer key

### 9.4.3 Propositional Logic: UGC NET CSE | December 2015 | Part 3 | Question: 44 top

In propositional logic, given $P$ and $P \rightarrow Q$, we can infer _____

A. $\sim Q$
B. $Q$
C. $P \wedge Q$
D. $\sim P \wedge Q$

ugcnetcse-dec2015-paper3 propositional-logic mathematical-logic

Answer key

### 9.4.4 Propositional Logic: UGC NET CSE | January 2017 | Part 2 | Question: 6 top

In propositional logic if $(P \rightarrow Q) \wedge (R \rightarrow S)$ and $(P \vee R)$ are two premises such that

$$\frac{\begin{array}{c}(P \rightarrow Q) \wedge (R \rightarrow S) \\ P \vee R \\ \hline Y\end{array}}{}$$

$Y$ is the premise :

A. $P \vee R$ B. $P \vee S$ C. $Q \vee R$ D. $Q \vee S$

ugcnetjan2017ii discrete-mathematics propositional-logic

Answer key

## 9.4.5 Propositional Logic: UGC NET CSE | January 2017 | Part 3 | Question: 59 top

Which of the following statements is true?

A. The sentence $S$ is a logical consequence of $S_1, \ldots, S_n$ if and only if $S_1 \wedge S_2 \wedge \cdots \wedge S_n \rightarrow S$ is satisfiable.
B. The sentence $S$ is a logical consequence of $S_1, \ldots, S_n$ if and only if $S_1 \wedge S_2 \wedge \cdots \wedge S_n \rightarrow S$ is valid.
C. The sentence $S$ is a logical consequence of $S_1, \ldots, S_n$ if and only if $S_1 \wedge S_2 \wedge \cdots \wedge S_n \neg S$ is consistent.
D. The sentence $S$ is a logical consequence of $S_1, \ldots, S_n$ if and only if $S_1 \wedge S_2 \wedge \cdots \wedge S_n \wedge S$ is inconsistent.

ugcnetcse-jan2017-paper3 mathematical-logic propositional-logic

Answer key

## 9.4.6 Propositional Logic: UGC NET CSE | June 2014 | Part 2 | Question: 20 top

Give a compound proposition involving propositions $p, q$ and $r$ that is true when exactly two of $p, q$ and $r$ are true and is false otherwise

A. $(p \vee q \wedge \neg r) \wedge (p \wedge \neg q \wedge r) \wedge (\neg p \wedge q \wedge r)$
B. $(p \wedge q \wedge \neg r) \wedge (p \vee q \wedge \neg r) \wedge (\neg p \wedge q \wedge r)$
C. $(p \wedge q \wedge \neg r) \vee (p \wedge \neg q \wedge r) \wedge (\neg p \wedge q \wedge r)$
D. $(p \wedge q \wedge \neg r) \vee (p \wedge \neg q \wedge r) \vee (\neg p \wedge q \wedge r)$

ugcnetcse-june2014-paper2 mathematical-logic propositional-logic

Answer key

## 9.4.7 Propositional Logic: UGC NET CSE | June 2019 | Part 2 | Question: 6 top

Which of the following is principal conjunctive normal form for $[(p \vee q) \wedge \neg p \rightarrow \neg q]$ ?

A. $p \vee \neg q$
B. $p \vee q$
C. $\neg p \vee q$
D. $\neg p \vee \neg q$

ugcnetcse-june2019-paper2 propositional-logic

Answer key

## 9.4.8 Propositional Logic: UGC NET CSE | June 2019 | Part 2 | Question: 8 top

Match List-I with List-II:

| | List-I | | List-II |
|---|---|---|---|
| $(a)$ | $p \rightarrow q$ | $(i)$ | $\rceil(q \rightarrow \rceil p)$ |
| $(b)$ | $p \vee q$ | $(ii)$ | $p \wedge \rceil q$ |
| $(c)$ | $p \wedge q$ | $(iii)$ | $\rceil p \rightarrow q$ |
| $(d)$ | $\rceil(p \rightarrow q)$ | $(iv)$ | $\rceil p \vee q$ |

Choose the correct option from those given below:

A. (a) – (ii); (b) – (iii); (c) – (i); (d) – (iv)
B. (a) – (ii); (b) – (i); (c) – (iii); (d) – (iv)
C. (a) – (iv); (b) – (i); (c) – (iii); (d) – (ii)
D. (a) – (iv); (b) – (iii); (c) – (i); (d) – (ii)

ugcnetcse-june2019-paper2 propositional-logic

Answer key

## 9.4.9 Propositional Logic: UGC NET CSE | Junet 2015 | Part 2 | Question: 10 top

Consider a proposition given as:

$x \geq 6$, if $x^2 \geq 25$ and and its proof as:

If $x \geq 6$, then $x^2 = x.x \geq 6.6 = 36 \geq 25$

Which of the following is correct with respect to the given proposition and its proof?

a. The proof shows the converse b. The proof starts by assuming what is to be shown c. The proof is correct and there is nothing wrong

A. $a$ only B. $c$ only C. $a$ and $b$ D. $b$ only

ugcnetcse-june2015-paper2 discrete-mathematics propositional-logic

Answer key

## 9.4.10 Propositional Logic: UGC NET CSE | Junet 2015 | Part 2 | Question: 9 top

Match the following :

| | List-I | | List-II |
|---|---|---|---|
| (a) | $(p \to q) \Leftrightarrow (\neg q \to \neg p)$ | (i) | Contrapositive |
| (b) | $[(p \wedge q) \to r] \Leftrightarrow [p \to (q \to r)]$ | (ii) | Exportation law |
| (c) | $(p \to q) \Leftrightarrow [(p \wedge \neg q) \to o]$ | (iii) | Reduction as absurdum |
| (d) | $(p \leftrightarrow q) \Leftrightarrow [(p \to q) \wedge (q \to p)]$ | (iv) | Equivalence |

**Codes :**

A. (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)
B. (a)-(ii), (b)-(iii), (c)-(i), (d)-(iv)
C. (a)-(iii), (b)-(ii), (c)-(iv), (d)-(i)
D. (a)-(iv), (b)-(ii), (c)-(iii), (d)-(i)

ugcnetcse-june2015-paper2 mathematical-logic propositional-logic

Answer key

## 9.4.11 Propositional Logic: UGC NET CSE | September 2013 | Part 2 | Question: 24 top

The quantification $\exists! x P(x)$ denotes the proposition "There exists a unique x such that P(x) is true", express he quantification using universal and existential quantifications and logical operators?

A. $\exists x P(x) \vee \forall x \forall y((P(x) \vee P(y)) \to x = y)$
B. $\forall x P(x) \wedge \forall x \forall y((P(x) \vee P(y)) \to x = y)$
C. $\exists x P(x) \wedge \forall x \forall y((P(x) \wedge P(y)) \to x = y)$
D. $\exists x P(x) \wedge \forall x \forall y((P(x) \vee P(y)) \to x = y)$

ugcnetsep2013ii discrete-mathematics propositional-logic

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 9.0.1 | C | 9.0.2 | A | 9.0.3 | D | 9.0.4 | A | 9.0.5 | D |
| 9.0.6 | B | 9.0.7 | A | 9.0.8 | D | 9.0.9 | A | 9.0.10 | A;B |
| 9.0.11 | Q-Q | 9.0.12 | C | 9.0.13 | X | 9.0.14 | B | 9.1.1 | B |
| 9.1.2 | A | 9.1.3 | A | 9.2.1 | Q-Q | 9.3.1 | A | 9.4.1 | Q-Q |
| 9.4.2 | C | 9.4.3 | B | 9.4.4 | D | 9.4.5 | B | 9.4.6 | D |
| 9.4.7 | A | 9.4.8 | D | 9.4.9 | C | 9.4.10 | A | 9.4.11 | C |

### 10.0.1 UGC NET CSE | June 2019 | Part 2 | Question: 9 top

Find the zero-one matrix of the transitive closure of the relation given by the matrix $A$ :

$$A = \begin{bmatrix} 1 & 0 & 1 \\ 0 & 1 & 0 \\ 1 & 1 & 0 \end{bmatrix}$$

A. $\begin{bmatrix} 1 & 1 & 1 \\ 0 & 1 & 0 \\ 1 & 1 & 1 \end{bmatrix}$

B. $\begin{bmatrix} 1 & 0 & 1 \\ 0 & 1 & 0 \\ 1 & 1 & 0 \end{bmatrix}$

C. $\begin{bmatrix} 1 & 0 & 1 \\ 0 & 1 & 0 \\ 1 & 0 & 1 \end{bmatrix}$

D. $\begin{bmatrix} 1 & 1 & 1 \\ 0 & 1 & 0 \\ 1 & 0 & 1 \end{bmatrix}$

ugcnetcse-june2019-paper2 set-theory&algebra

Answer key

### 10.0.2 UGC NET CSE | December 2004 | Part 2 | Question: 2 top

If $f(x) = x + 1$ and $g(x) = x + 3$ then $f0f0f0f$ is :

A. $g$ B. $g + 1$ C. $g^4$ D. None of these

ugcnetcse-dec2004-paper2

Answer key

### 10.0.3 UGC NET CSE | June 2016 | Part 2 | Question: 1 top

How many difference equivalence relations with exactly three different equivalence classes are there on a set with five elements?

A. 10 B. 15 C. 25 D. 30

ugcnetcse-june2016-paper2 discrete-mathematics set-theory&algebra

Answer key

## 10.1 Boolean (1) top

### 10.1.1 Boolean: UGC NET CSE | June 2019 | Part 2 | Question: 13 top

How many different Boolean functions of degree $n$ are the

A. $2^{2^n}$ B. $(2^2)^n$ C. $2^{2^n} - 1$ D. $2^n$

ugcnetcse-june2019-paper2 boolean function

Answer key

## 10.2 Complement In Fuzzy Set (1) top

### 10.2.1 Complement In Fuzzy Set: UGC NET CSE | June 2014 | Part 3 | Question: 07 top

Given

$U = \{1, 2, 3, 4, 5, 6, 7\}$

$A = \{(3, 0.7), (5, 1), (6, 0.8)\}$

then $\tilde{A}$ will be: (where $\sim\rightarrow$ complement)

A. $\{(4,0.7),(2,1),(1,0.8)\}$
B. $\{(4,0.3),(5,0),(6,0.2)\}$
C. $\{(1,1),(2,1),(3,0.3),(4,1),(6,0.2),(7,1)\}$
D. $\{(3,0.3),(6,0.2)\}$

ugcnetjune2014iii fuzzy-set complement-in-fuzzy-set

Answer key

## 10.3 Euler Phi Function (1) top

### 10.3.1 Euler Phi Function: UGC NET CSE | June 2019 | Part 2 | Question: 70 top

Consider the following statements:

$S_1$: For any integer $n > 1$, $a^{\phi(n)} \equiv 1 (mod\, n)$ for all $a \in Z_n^*$ , where $\phi(n)$ is Euler's phi function.

$S_2$: If $p$ is prime, then $a^p \equiv 1 (mod\, p)$ for all $a \in Z_p^*$.

Which one of the following is/are correct?

A. Only $S_1$
B. Only $S_2$
C. Both $S_1$ and $S_2$
D. Neither $S_1$ nor $S_2$

ugcnetcse-june2019-paper2 euler-phi-function set-theory&algebra

Answer key

## 10.4 Factors (1) top

### 10.4.1 Factors: UGC NET CSE | January 2017 | Part 2 | Question: 4 top

How many multiples of $6$ are there between the following pairs of numbers?

$0$ and $100$ and $-6$ and $34$

A. $1$ and $6$
B. $17$ and $6$
C. $17$ and $7$
D. $16$ and $7$

ugcnetjan2017ii set-theory&algebra factors

Answer key

## 10.5 Function Composition (1) top

### 10.5.1 Function Composition: UGC NET CSE | December 2013 | Part 2 | Question: 37 top

Let f and g be the functions from the set of integers defined by $f(x) = 2x + 3$ and $g(x) = 3x + 2$. Then the composition of f and g and g and f is given as

A. 6x+7, 6x+11
B. 6x+11, 6x+7
C. 5x+5, 5x+5
D. None of the above

ugcnetcse-dec2013-paper2 algebra function-composition

Answer key

## 10.6 Functions (3) top

### 10.6.1 Functions: UGC NET CSE | December 2014 | Part 2 | Question: 05 top

If we define the functions $f$, $g$ and $h$ that map $R$ into $R$ by :

$f(x) = x^4, g(x) = \sqrt{x^2 + 1}, h(x) = x^2 + 72$, then the value of the composite functions $ho(gof)$ and $(hog)of$ are given as

A. $x^8 - 71$ and $x^8 - 71$
B. $x^8 - 73$ and $x^8 - 73$
C. $x^8 + 71$ and $x^8 + 71$
D. $x^8 + 73$ and $x^8 + 73$

ugcnetcse-dec2014-paper2 discrete-mathematics functions

Answer key

### 10.6.2 Functions: UGC NET CSE | January 2017 | Part 2 | Question: 3 top

The functions mapping $R$ into $R$ are defined as :

$f(x) = x^3 - 4x, g(x) = \frac{1}{x^2+1}$ and $h(x) = x^4$.

Then find the value of the following composite functions :

$h_o g(x)$ and $h_o g_o f(x)$

A. $(x^2+1)^4$ and $\left[(x^3-4x)^2+1\right]^4$

B. $(x^2+1)^4$ and $\left[(x^3-4x)^2+1\right]^{-4}$

C. $(x^2+1)^{-4}$ and $\left[(x^2-4x)^2+1\right]^4$

D. $(x^2+1)^{-4}$ and $\left[(x^3-4x)^2+1\right]^{-4}$

ugcnetjan2017ii functions set-theory&algebra

Answer key

### 10.6.3 Functions: UGC NET CSE | September 2013 | Part 2 | Question: 25 top

If F and G are Boolean functions of degree n. Then, which of the following is true?

A. F $\leq$ F + G and F G $\leq$ F

B. G $\leq$ F + G and F G $\geq$ G

C. F $\geq$ F + G and F G $\leq$ F

D. G $\geq$ F + G and F G $\leq$ F

functions ugcnetsep2013ii

Answer key

## 10.7 Inclusion Exclusion (1) top

### 10.7.1 Inclusion Exclusion: UGC NET CSE | October 2020 | Part 2 | Question: 1 top

The number of positive integers not exceeding $100$ that are either odd or the square of an integer is _____

A. $63$

B. $59$

C. $55$

D. $50$

ugcnetcse-oct2020-paper2 discrete-mathematics inclusion-exclusion

Answer key

## 10.8 Poset (1) top

### 10.8.1 Poset: UGC NET CSE | June 2019 | Part 2 | Question: 1 top

Consider the poset $(\{3, 5, 9, 15, 24, 45\}, |)$.

Which of the following is correct for the given poset ?

A. There exist a greatest element and a least element

B. There exist a greatest element but not a least element

C. There exist a least element but not a greatest element

D. There does not exist a greatest element and a least element

ugcnetcse-june2019-paper2 poset set-theory&algebra

Answer key

## 10.9 Power Set (1) top

### 10.9.1 Power Set: UGC NET CSE | December 2012 | Part 2 | Question: 4 top

The power set of the set $\{\Phi\}$ is

A. $\{\Phi\}$
B. $\{\Phi, \{\Phi\}\}$
C. $\{0\}$
D. $\{0, \Phi, \{\Phi\}\}$

ugcnetcse-dec2012-paper2 set-theory&algebra set-theory power-set

Answer key

## 10.10 Relational Algebra (1) top

### 10.10.1 Relational Algebra: UGC NET CSE | December 2008 | Part 2 | Question: 12 top

A relation R in {1,2,3,4,5,6} is given by {(1,2),(2,3),(3,4),(4,4),(4,5)}. This relation is:

1. reflexive
2. symmetric
3. transitive
4. not reflexive, not symmetric and not transitive

ugcnetcse-dec2008-paper2 set-theory&algebra relational-algebra

Answer key

## 10.11 Relations (4) top

### 10.11.1 Relations: UGC NET CSE | December 2009 | Part 2 | Question: 01 top

If she is my friend and you are her friend, then we are friends. Given this, the friend relationship in this context is _____.

(i) commutative (ii) transitive (iii) implicative (iv) equivalence

(A) (i) and (ii)

(B) (iii)

(C) (i), (ii), (iii) and (iv)

(D) None of these

ugcnetcse-dec2009-paper2 set-theory&algebra relations

Answer key

### 10.11.2 Relations: UGC NET CSE | June 2010 | Part 2 | Question: 1 top

"$x^1$ is a clone of $x$" means $x^1$ is identical to $x$ in terms of the physical attributes namely, height, weight and complexion. Given, height, weight and complexion only form a complete set of attributes for an entity, cloning is an equivalence relation. What is your impression about this statement ?

A. The statement is true
B. The statement is false
C. The truth value of the statement cannot be computed
D. None of these

ugcnetcse-june2010-paper2 set-theory&algebra relations

Answer key

### 10.11.3 Relations: UGC NET CSE | June 2013 | Part 2 | Question: 34 top

The relation “devides” on a set of positive integers is_____

A. Symmetric and transitive
B. Anti symmetric and transitive
C. Symmetric only
D. Transitive only

ugcnetcse-june2013-paper2 relations set-theory&algebra

Answer key

## 10.11.4 Relations: UGC NET CSE | June 2016 | Part 2 | Question: 3 top

Suppose that $R_1$ and $R_2$ are reflecive relations on a set A. Which of the following statements is correct?

A. $R_1 \cap R_2$ is reflexive and $R_1 \cup R_2$ is irreflexive
B. $R_1 \cap R_2$ is irreflexive and $R_1 \cup R_2$ is reflexive
C. Both $R_1 \cap R_2$ and $R_1 \cup R_2$ are reflexive
D. Both $R_1 \cap R_2$ and $R_1 \cup R_2$ are irreflexive

ugcnetcse-june2016-paper2 discrete-mathematics relations

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 10.0.1 | A | 10.0.2 | Q-Q | 10.0.3 | C | 10.1.1 | A | 10.2.1 | C |
| 10.3.1 | A | 10.4.1 | C | 10.5.1 | A | 10.6.1 | D | 10.6.2 | D |
| 10.6.3 | A | 10.7.1 | C | 10.8.1 | D | 10.9.1 | B | 10.10.1 | Q-Q |
| 10.11.1 | Q-Q | 10.11.2 | Q-Q | 10.11.3 | B | 10.11.4 | C | | |

### 11.0.1 UGC NET CSE | December 2015 | Part 2 | Question: 6 top

Which of the following arguments are not valid ?

a. "If Gora gets the job and works hard, then he will be happy. Gora gets the job. Therefore, he will be happy."
b. "If Ram works hard, then he will be happy. Ram is happy. Therefore, Ram works hard."
c. "If Pandu gets the job, then he will be happy. Pandu is happy. Therefore, Pandu gets the job."
d. "If Gora is guilty, then he will be punished. Gora is punished. Therefore, Gora is guilty."

A. a and b
B. a, b, and c
C. a and c
D. b

ugcnetcse-dec2015-paper2 discrete-mathematics mathematical-logic

Answer key

### 11.0.2 UGC NET CSE | October 2020 | Part 2 | Question: 53 top

Consider the following statements:

a. Any tree is $2$-colorable
b. A graph $G$ has no cycles of even length if it is bipartite
c. A graph $G$ is $2$-colorable if is bipartite
d. A graph $G$ can be colored with $d+1$ colors if $d$ is the maximum degree of any vertex in the graph $G$
e. A graph $G$ can be colored with $O(\log |v|)$ colors if it has $O(|v|)$ edges.

Choose the correct answer from the options given below:

A. $(c)$ and $(e)$ are incorrect
B. $(b)$ and $(c)$ are incorrect
C. $(b)$ and $(e)$ are incorrect
D. $(a)$ and $(d)$ are incorrect

ugcnetcse-oct2020-paper2 discrete-mathematics graph-theory

Answer key

### 11.0.3 UGC NET CSE | December 2015 | Part 2 | Question: 48 top

How many solutions are there for the equation $x+y+z+u=29$ subject to the constraints that $x \geq 1,\ y \geq 2\ z \geq 3\ and\ u \geq 0$?

A. 4960
B. 2600
C. 23751
D. 8855

ugcnetcse-dec2015-paper2 discrete-mathematics combinatory

Answer key

### 11.0.4 UGC NET CSE | December 2015 | Part 2 | Question: 7 top

Let P(m,n) be the statement "m divides n" where the universe of discourse for both the variable is the set of positive integers. Determine the truth values of each of the following propositions:

a. $\forall m \forall n P(m,n)$,
b. $\forall n P(1,n)$
c. $\exists m \forall n P(m,n)$

A. a-True, b-True, c-False
B. a-True, b-False, c-False
C. a-False, b-False, c-False
D. a-True, b-True, c-True

ugcnetcse-dec2015-paper2 discrete-mathematics mathematical-logic

Answer key

### 11.0.5 UGC NET CSE | Junet 2015 | Part 3 | Question: 24 top

Which one of the following is true?

A. The resolvent of two Horn clauses is not a Horn clause
B. The resolvent of two Horn clauses is a Horn clause
C. If we resolve a negated goal G against a fact or rule A to get clause C then C has positive literal or non-null goal
D. If we resolve a negated goal G against a fact or rule A to get clause C then C has positive literal or null goal

ugcnetcse-june2015-paper3 discrete-mathematics mathematical-logic

Answer key

## 11.0.6 UGC NET CSE | December 2013 | Part 3 | Question: 24 top

The objective of ____ procedure is to discover at least one ____ that causes two literals to match.

A. unification, validation
B. unification, substituion
C. substitution, unification
D. minimax, maximum

ugcnetcse-dec2013-paper3 discrete-mathematics mathematical-logic

Answer key

## 11.0.7 UGC NET CSE | December 2012 | Part 3 | Question: 21 top

How many solutions do the following equations have?

$x_1 + x_2 + x_3 = 11$

where $x_1 \geq 1, x_2 \geq 2, x_3 \geq 3$

A. $C(7,11)$
B. $C(11,3)$
C. $C(14,11)$
D. $C(7,5)$

ugcnetcse-dec2012-paper3 discrete-mathematics combinatory

Answer key

## 11.0.8 UGC NET CSE | June 2012 | Part 3 | Question: 50 top

How many relations are there on a set with n elements that are symmetric and a set with n elements that are reflexive and symmetric?

A. $2^{n(n+1)/2}$ and $2^n.3^{n(n-1)/2}$
B. $3^{n(n-1)/2}$ and $2^{n(n-1)}$
C. $2^{n(n+1)/2}$ and $3^{n(n-1)/2}$
D. $2^{n(n+1)/2}$ and $2^{n(n-1)/2}$

ugcnetcse-june2012-paper3 discrete-mathematics set-theory&algebra

Answer key

## 11.0.9 UGC NET CSE | December 2014 | Part 2 | Question: 01 top

Consider a set $A = \{1, 2, 3, \ldots\ldots\ldots, 1000\}$.

How many members of A shall be divisible by $3$ or by $5$ or by both $3$ and $5$?

A. 533
B. 599
C. 467
D. 66

ugcnetcse-dec2014-paper2 discrete-mathematics set-theory&algebra

Answer key

## 11.0.10 UGC NET CSE | June 2012 | Part 3 | Question: 17 top

Let $Q(x, y)$ denote “x+y=0” and let there be two quantifications given as

I. $\exists y \forall x Q(x, y)$
II. $\forall x \exists y Q(x, y)$

where $x$ and $y$ are real numbers. Then which of the following is valid?

A. I is true and II is false
B. I is false and II is true
C. I is false and II is also false
D. both I and II are true

ugcnetcse-june2012-paper3 discrete-mathematics mathematical-logic

Answer key

## 11.0.11 UGC NET CSE | October 2020 | Part 2 | Question: 26 top

Let $G$ be a directed graph whose vertex set is the set of numbers from $1$ to $100$. There is an edge from a vertex $i$ to a vertex $j$ if and only if either $j = i + 1$ or $j = 3i$. The minimum number of edges in a path in $G$ from vertex $1$ to vertex $100$ is _____

A. $23$
B. $99$
C. $4$
D. $7$

ugcnetcse-oct2020-paper2 discrete-mathematics graph-theory

Answer key

### 11.0.12 UGC NET CSE | October 2020 | Part 2 | Question: 37 top

If $f(x) = x$ is my friend, and $p(x) = x$ is perfect, then correct logical translation of the statement "some of my friends are not perfect" is _____

A. $\forall_x(f(x) \wedge \neg p(x))$
B. $\exists_x(f(x) \wedge \neg p(x))$
C. $\neg(f(x) \wedge \neg p(x))$
D. $\exists_x(\neg f(x) \wedge \neg p(x))$

ugcnetcse-oct2020-paper2 discrete-mathematics mathematical-logic

Answer key

### 11.0.13 UGC NET CSE | October 2020 | Part 2 | Question: 38 top

What kind of clauses are available in conjunctive normal form?

A. Disjunction of literals
B. Disjunction of variables
C. Conjunction of literals
D. Conjunction of variables

ugcnetcse-oct2020-paper2 discrete-mathematics mathematical-logic

Answer key

### 11.0.14 UGC NET CSE | October 2020 | Part 2 | Question: 3 top

Which of the following pairs of propositions are not logically equivalent?

A. $((p \rightarrow r) \wedge (q \rightarrow r))$ and $((p \vee q) \rightarrow r)$
B. $p \leftrightarrow q$ and $(\neg p \leftrightarrow \neg q)$
C. $((p \wedge q) \vee (\neg p \wedge \neg q))$ and $p \leftrightarrow q$
D. $((p \wedge q) \rightarrow r)$ and $((p \rightarrow r) \wedge (q \rightarrow r))$

ugcnetcse-oct2020-paper2 discrete-mathematics mathematical-logic

Answer key

### 11.0.15 UGC NET CSE | July 2018 | Part 2 | Question: 86 top

If $A_i = \{-i, \ldots, -2, -1, 0, 1, 2, \ldots, i\}$ then $\cup_{i=1}^{\infty} A_i$ is

A. Z
B. Q
C. R
D. C

ugcnetcse-july2018-paper2 discrete-mathematics

Answer key

### 11.0.16 UGC NET CSE | October 2020 | Part 2 | Question: 86 top

Let $G$ be a simple undirected graph, $T_D$ be a DFS tree on $G$, and $T_B$ be the BFS tree on $G$. Consider the following statements.

Statement $I$: No edge of $G$ is a cross with respect to $T_D$

Statement $II$: For every edge $(u, v)$ of $G$, if $u$ is at depth $i$ and $v$ is at depth $j$ in $T_B$ then $|i - j| = 1$

In the light of the above statements, choose the correct answer from the options given below

A. Both Statement $I$ and Statement $II$ are true
B. Both Statement $I$ and Statement $II$ are false
C. Statement $I$ is correct but Statement $II$ is false
D. Statement $I$ is incorrect but Statement $II$ is true

ugcnetcse-oct2020-paper2 discrete-mathematics graph-theory

## 11.1 Boolean Function (1) top

### 11.1.1 Boolean Function: UGC NET CSE | August 2016 | Part 2 | Question: 1 top

The Boolean function $[\sim(\sim p \wedge q) \wedge \sim(\sim p \wedge \sim q)] \vee (p \wedge r)$ is equal to the Boolean function :

A. $q$ B. $p \wedge r$ C. $p \vee q$ D. $p$

ugcnetcse-aug2016-paper2 discrete-mathematics boolean-function

Answer key

## 11.2 Equivalence Class (1) top

### 11.2.1 Equivalence Class: UGC NET CSE | July 2018 | Part 2 | Question: 89 top

Which of the following is an equivalence relation on the set of all functions from Z to Z?

A. $\{f, g) \mid f(x) - g(x) = 1 \,\forall\, x \in Z\}$
B. $\{f, g) \mid f(0) = g(0) \text{ or } f(1) = g(1)\}$
C. $\{f, g) \mid f(0) = g(1) \text{ and } f(1) = g(0)\}$
D. $\{f, g) \mid f(x) - g(x) = k \text{ for some } k \in Z\}$

ugcnetcse-july2018-paper2 discrete-mathematics equivalence-class

Answer key

## 11.3 First Order Logic (4) top

### 11.3.1 First Order Logic: UGC NET CSE | December 2012 | Part 3 | Question: 58 top

Skolmization is the process of

A. bringing all the quantifiers in the beginning of a formula in FDL
B. removing all the universal quantifiers
C. removing all the extential quantifiers
D. all of the above

ugcnetcse-dec2012-paper3 engineering-mathematics discrete-mathematics first-order-logic

Answer key

### 11.3.2 First Order Logic: UGC NET CSE | July 2018 | Part 2 | Question: 77 top

Consider the following English sentence:

"Agra and Gwalior are both in India".

A sudent has written a logical sentence for the above English sentence in First-Order Logic using predicate IN(x, y), which means x is in y, as follows.

In(Agra, India) $\vee$ In(Gwalior, India)

Which one of the following is correct with respect to the above logical sentence?

A. It is syntactically valid but does not express the meaning of the English sentence
B. It is syntactically valid and expresses the meaning of the English sentence also
C. It is syntactically invalid but expresses the meaning of the English sentence
D. It is syntactically invalid and does not express the meaning of the English sentence

ugcnetcse-july2018-paper2 discrete-mathematics first-order-logic

Answer key

### 11.3.3 First Order Logic: UGC NET CSE | June 2013 | Part 3 | Question: 69 top

If we convert $\exists u \forall v \forall x \exists y (P(f(u), v, x, y) \rightarrow Q(u, v, y))$ to $\forall v \forall x (P(f(a), v, x, g(v, x)) \rightarrow Q(a, v, g(v, x)))$. This process is known as

A. Simplification B. Unification C. Skolemization D. Resolution

ugcnetcse-june2013-paper3 discrete-mathematics first-order-logic

Answer key

### 11.3.4 First Order Logic: UGC NET CSE | October 2020 | Part 2 | Question: 40 top

Consider the following argument with premise $\forall_x(P(x) \vee Q(x))$ and conclusion $(\forall_x P(x)) \wedge (\forall_x Q(x))$

| | | |
|---|---|---|
| $(A)$ | $\forall_x(P(x) \vee Q(x))$ | Premise |
| $(B)$ | $P(c) \vee Q(c)$ | Universal instantiation from (A) |
| $(C)$ | $P(c)$ | Simplification from (B) |
| $(D)$ | $\forall_x P(x)$ | Universal Generalization of (C) |
| $(E)$ | $Q(c)$ | Simplification from (B) |
| $(F)$ | $\forall_x Q(x)$ | Universal Generalization of (E) |
| $(G)$ | $(\forall_x P(x)) \wedge (\forall_x Q(x))$ | Conjuction of (D) and (F) |

A. This is a valid argument
B. Steps $(C)$ and $(E)$ are not correct inferences
C. Steps $(D)$ and $(F)$ are not correct inferences
D. Step $(G)$ is not a correct inference

ugcnetcse-oct2020-paper2 discrete-mathematics first-order-logic

Answer key

## 11.4 Functions (2) top

### 11.4.1 Functions: UGC NET CSE | December 2011 | Part 2 | Question: 4 top

Domain and Range of the function $Y = -\sqrt{-2x+3}$ is

A. $x \geq \frac{3}{2}, y \geq 0$
B. $x > \frac{3}{2}, y \leq 0$
C. $x \geq \frac{3}{2}, y \leq 0$
D. $x \leq \frac{3}{2}, y \leq 0$

ugcnetcse-dec2011-paper2 discrete-mathematics functions

Answer key

### 11.4.2 Functions: UGC NET CSE | December 2012 | Part 3 | Question: 19 top

Identify the following activation function:

$\Phi(V) = Z + \frac{1}{1+exp(-x*V+Y)}$, Z, X, Y are parameters.

A. Step function
B. Ramp function
C. Sigmoid function
D. Gaussian function

ugcnetcse-dec2012-paper3 discrete-mathematics functions

Answer key

## 11.5 Group Theory (2) top

### 11.5.1 Group Theory: UGC NET CSE | December 2015 | Part 2 | Question: 10 top

Which of the following property/ies a Group G must hold, in order to be an Abelian group?

a. The distributive property
b. The commutative property
c. The symmetric property

A. a and b only
B. b and c only
C. a and c only
D. b only

ugcnetcse-dec2015-paper2 discrete-mathematics set-theory&algebra group-theory

Answer key

### 11.5.2 Group Theory: UGC NET CSE | June 2012 | Part 3 | Question: 67 top

Let a*H and b*H be two cosets of H.

I. Either a*H and b*H are disjoint
II. a*H and b*H are identical

Then,

A. Only I is true
B. Only II is true
C. I or II is true
D. I and II is false

ugcnetcse-june2012-paper3 discrete-mathematics set-theory&algebra group-theory

Answer key

## 11.6 Linear Programming (1) top

### 11.6.1 Linear Programming: UGC NET CSE | June 2016 | Part 3 | Question: 70 top

Consider the statement

"Either $-2 \leq x \leq -1$ or $1 \leq x \leq 2$"

The negation of this statement is

A. x<-2 or 2<x or -1<x<1
B. x<-2 or 2<x
C. -1<x<1
D. x $\leq$ -2 or 2 $\leq$ x or -1<x<1

ugcnetcse-june2016-paper3 linear-programming

Answer key

## 11.7 Number Representation (1) top

### 11.7.1 Number Representation: UGC NET CSE | December 2011 | Part 2 | Question: 34 top

Negative numbers cannot be represented in

A. Signed magnitude form
B. $1's$ complement form
C. $2's$ complement form
D. None of the above

ugcnetcse-dec2011-paper2 discrete-mathematics number-representation

Answer key

## 11.8 Partial Order (2) top

### 11.8.1 Partial Order: UGC NET CSE | December 2010 | Part 2 | Question: 3 top

A partially ordered set is said to be a lattice if every two elements in the set have

A. A unique least upper bound
B. A unique greatest lower bound
C. Both $(A)$ and $(B)$
D. None of the above

ugcnetcse-dec2010-paper2 discrete-mathematics partial-order

Answer key

### 11.8.2 Partial Order: UGC NET CSE | July 2018 | Part 2 | Question: 90 top

Which of the following statements is true?

A. $(Z, \leq)$ is not totally ordered
B. The set inclusion relation $\subseteq$ is a partial ordering on the power set of a set S
C. $(Z, \neq)$ is a poset
D. The directed graph is not a partial order

ugcnetcse-july2018-paper2 discrete-mathematics partial-order

Answer key

## 11.9 Propositional Logic (9) top

### 11.9.1 Propositional Logic: UGC NET CSE | August 2016 | Part 2 | Question: 2 top

Let us assume that you construct ordered tree to represent the compound proposition $(\sim (p \wedge q)) \leftrightarrow (\sim p \vee \sim q)$.

Then, the prefix expression and post-fix expression determined using this ordered tree are given as _____ and

_____ respectively.

A. $\leftrightarrow\sim \wedge pq\vee \sim\sim pq, pq\wedge \sim p\sim q\sim \vee \leftrightarrow$
B. $\leftrightarrow\sim \wedge pq\vee \sim p\sim q, pq\wedge \sim p\sim q\sim \vee \leftrightarrow$
C. $\leftrightarrow\sim \wedge pq\vee \sim\sim pq, pq\wedge \sim p\sim\sim q\vee \leftrightarrow$
D. $\leftrightarrow\sim \wedge pq\vee \sim p\sim q, pq\wedge \sim p\sim\sim q\vee \leftrightarrow$

ugcnetcse-aug2016-paper2 discrete-mathematics propositional-logic

Answer key

## 11.9.2 Propositional Logic: UGC NET CSE | August 2016 | Part 3 | Question: 70 top

Let $\nu(x)$ mean $x$ is a vegetarian, $m(y)$ for $y$ is meat, and $e(x,y)$ for $x$ eats $y$. Based on these, consider the following sentences :

I. $\forall x \vee (x) \Leftrightarrow (\forall y e(x,y) \implies \neg m(y))$

II. $\forall x \vee (x) \Leftrightarrow (\neg(\exists y m(y) \wedge e(x,y)))$

III. $\forall x(\exists y m(y) \wedge e(x,y)) \Leftrightarrow (x) \Leftrightarrow \neg \vee (x)$

One can determine that

A. Only $I$ and $II$ are equivalent sentences
B. Only $II$ and $III$ are equivalent sentences.
C. Only $I$ and $III$ are equivalent sentence .
D. $I, II,$ and $III$ are equivalent sentences.

ugcnetcse-aug2016-paper3 discrete-mathematics propositional-logic

Answer key

## 11.9.3 Propositional Logic: UGC NET CSE | August 2016 | Part 3 | Question: 74 top

Consider the following logical inferences :

$I_1$ : If it is Sunday then school will not open.

The school was open.

Inference : It was not Sunday.

$I_2$ : If it is Sunday then school will not open.

It was not Sunday.

Inference : The school was open.

Which of the following is correct ?

A. Both $I_1$ and $I_2$ are correct inferences.
B. $I_1$ is correct but $I_2$ is not a correct inference.
C. $I_1$ is not correct but $I_2$ is a correct inference.
D. Both $I_1$ and $I_2$ are not correct inferences.

ugcnetcse-aug2016-paper3 discrete-mathematics propositional-logic

Answer key

## 11.9.4 Propositional Logic: UGC NET CSE | December 2011 | Part 2 | Question: 43 top

The proposition $\sim$ qvp is equivalent to

A. p $\rightarrow$ q
B. q $\rightarrow$ p
C. p $\leftrightarrow$ q
D. p $\vee$ q

ugcnetcse-dec2011-paper2 discrete-mathematics propositional-logic

Answer key

## 11.9.5 Propositional Logic: UGC NET CSE | December 2012 | Part 3 | Question: 75 top

Let $\theta(x,y,z)$ be the statement “x+y=z” and let there be two quantification given as

I. $\forall x \forall y \exists z \theta(x,y,z)$
II. $\exists z \forall x \forall y \theta(x,y,z)$

where x, y, z are real numbers, then which one of the following is correct?

A. I is true and II is true
B. I is true and II is false
C. I is false and II is true
D. I is false and II is false

ugcnetcse-dec2012-paper3 discrete-mathematics propositional-logic

Answer key

## 11.9.6 Propositional Logic: UGC NET CSE | December 2015 | Part 2 | Question: 8 top

Match the following :

| | List-I | | List-II |
|---|---|---|---|
| (a) | Vacuous proof | (i) | A proof that the implication $p \to q$ is true based on the fact that $p$ is false. |
| (b) | Trivial proof | (ii) | A proof that the implication $p \to q$ is true based on the fact that $q$ is true. |
| (c) | Direct proof | (iii) | A proof that the implication $p \to q$ is true that proceeds by showing that $q$ must be true when $p$ is true. |
| (d) | Indirect proof | (iv) | A proof that the implication $p \to q$ is true that proceeds by showing that $p$ must be false when $q$ is false. |

**Codes :**

A. (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)
B. (a)-(ii), (b)-(iii), (c)-(i), (d)-(iv)
C. (a)-(iii), (b)-(ii), (c)-(iv), (d)-(i)
D. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

ugcnetcse-dec2015-paper2 discrete-mathematics propositional-logic

Answer key

## 11.9.7 Propositional Logic: UGC NET CSE | July 2018 | Part 2 | Question: 76 top

Consider the following statements:

a. False $\models$ True
b. If $\alpha \models (\beta \wedge \gamma$ then $\alpha \models \gamma$

Which of the following is correct with respect to above statements?

A. Both statement a and statement b are false
B. Statement a is true and statement b is false
C. Statement a is false and statement b is true
D. Both statement a and statement b are true

ugcnetcse-july2018-paper2 discrete-mathematics propositional-logic

Answer key

## 11.9.8 Propositional Logic: UGC NET CSE | Junet 2015 | Part 3 | Question: 57 top

In propositional language $P \leftrightarrow Q$ is equivalent to (where $\sim$ denotes NOT)

A. $\sim (P \vee Q) \wedge \sim (Q \vee P)$
B. $(\sim P \vee Q) \wedge (\sim Q \vee P)$
C. $(P \vee Q) \wedge (Q \vee P)$
D. $\sim (P \vee Q) \to \sim (Q \vee P)$

ugcnetcse-june2015-paper3 discrete-mathematics propositional-logic

Answer key

## 11.9.9 Propositional Logic: UGC NET CSE | October 2020 | Part 2 | Question: 61 top

Consider the statement below.

A person who is radical $(R)$ is electable $(E)$ if he/she is conservative $(C)$, but otherwise not electable.

Few probable logical assertions of the above sentence are given below.

A. $(R \wedge E) \Leftrightarrow C$ B. $R \rightarrow (E \leftrightarrow C)$ C. $R \Rightarrow ((C \Rightarrow E) \vee \neg E)$ D. $(\neg R \vee \neg E \vee C) \wedge (\neg R \vee \neg C \vee E)$

Which of the above logical assertions are true?

Choose the correct answer from the options given below:

A. $(B)$ only B. $(C)$ only C. $(A)$ and $(C)$ only D. $(B)$ and $(D)$ only

ugcnetcse-oct2020-paper2 discrete-mathematics propositional-logic

Answer key

## 11.10 Quantifiers (1) top

### 11.10.1 Quantifiers: UGC NET CSE | July 2018 | Part 2 | Question: 85 top

The equivalence of $\neg \exists x\, Q(x)$ is

A. $\exists x \neg Q(x)$
B. $\forall x \neg Q(x)$
C. $\neg \exists x \neg Q(x)$
D. $\forall x\, Q(x)$

ugcnetcse-july2018-paper2 discrete-mathematics quantifiers

Answer key

## 11.11 Relations (2) top

### 11.11.1 Relations: UGC NET CSE | July 2018 | Part 2 | Question: 88 top

Which of the relations on {0, 1, 2, 3} is an equivalence relation?

A. { (0, 0) (0, 2) (2, 0) (2, 2) (2, 3) (3, 2) (3, 3) }
B. { (0, 0) (1, 2) (2, 2) (3, 3) }
C. { (0, 0) (0, 1) (0, 2) (1, 0) (1, 1) (1, 2) (2, 0) }
D. { (0, 0) (0, 2) (2, 3) (1, 1) (2, 2)

ugcnetcse-july2018-paper2 discrete-mathematics relations

Answer key

### 11.11.2 Relations: UGC NET CSE | October 2020 | Part 2 | Question: 39 top

Consider the following properties:

a. Reflexive b. Antisymmetric c. Symmetric

Let $A = \{a, b, c, d, e, f, g\}$ and $R = \{(a, a), (b, b), (c, d), (c, g), (d, g), (e, e), (f, f), (g, g)\}$ be a relation on $A$. Which of the following property (properties) is (are) satisfied by the relation $R$?

A. Only $a$ B. Only $c$ C. Both $a$ and $b$ D. $b$ and not $a$

ugcnetcse-oct2020-paper2 discrete-mathematics set-theory&algebra relations

Answer key

## 11.12 Set Theory (3) top

### 11.12.1 Set Theory: UGC NET CSE | August 2016 | Part 2 | Question: 3 top

Let $A$ and $B$ be sets in a finite universal set $U$. Given the following : $|A - B|, |A \bigoplus B|, |A| + |B|$ and $|A \cup B|$ Which of the following is in order of increasing size ?

A. $|A - B| < |A \bigoplus B| < |A| + |B| < |A \cup B|$
B. $|A \bigoplus B| < |A - B| < |A \cup B| < |A| + |B|$
C. $|A \bigoplus B| < |A| + |B| < |A - B| < |A \cup B|$

D. $|A-B| < |A \bigoplus B| < |A \cup B| < |A| + |B|$

ugcnetcse-aug2016-paper2 discrete-mathematics set-theory

Answer key

### 11.12.2 Set Theory: UGC NET CSE | December 2012 | Part 3 | Question: 34 top

The power set of AUB, where A={2, 3, 5, 7} and B={2, 5, 8, 9}is

A. 256 B. 64 C. 16 D. 4

ugcnetcse-dec2012-paper3 engineering-mathematics discrete-mathematics set-theory

Answer key

### 11.12.3 Set Theory: UGC NET CSE | December 2015 | Part 2 | Question: 3 top

Which of the following is/are not true ?

a. The set of negative integers is countable b. The set of integers that are multiples of 7 is countable c. The set of real numbers between 0 and 1/2 is counta

A. a and b only B. b and c only C. c and d only D. d only

ugcnetcse-dec2015-paper2 discrete-mathematics set-theory

Answer key

## Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 11.0.1 | B | 11.0.2 | C | 11.0.3 | B | 11.0.4 | A | 11.0.5 | B |
| 11.0.6 | B | 11.0.7 | D | 11.0.8 | D | 11.0.9 | C | 11.0.10 | B |
| 11.0.11 | D | 11.0.12 | B | 11.0.13 | A | 11.0.14 | D | 11.0.15 | Q-Q |
| 11.0.16 | C | 11.1.1 | Q-Q | 11.2.1 | Q-Q | 11.3.1 | C | 11.3.2 | Q-Q |
| 11.3.3 | C | 11.3.4 | B | 11.4.1 | Q-Q | 11.4.2 | C | 11.5.1 | D |
| 11.5.2 | C | 11.6.1 | A | 11.7.1 | Q-Q | 11.8.1 | Q-Q | 11.8.2 | Q-Q |
| 11.9.1 | Q-Q | 11.9.2 | Q-Q | 11.9.3 | Q-Q | 11.9.4 | Q-Q | 11.9.5 | B |
| 11.9.6 | A | 11.9.7 | Q-Q | 11.9.8 | B | 11.9.9 | D | 11.10.1 | Q-Q |
| 11.11.1 | Q-Q | 11.11.2 | D | 11.12.1 | Q-Q | 11.12.2 | B | 11.12.3 | D |

### 12.0.1 UGC NET CSE | December 2004 | Part 2 | Question: 1 top

$AVA = A$ is called :

A. Identity law
B. De Morgan's law
C. Idempotent law
D. Complement law

ugcnetcse-dec2004-paper2

Answer key

## 12.1 Eigen Value (1) top

### 12.1.1 Eigen Value: CSIR UGC NET top

Let $A$ be a $3 \times 3$ real matrix. Suppose 1 and $-1$ are two of the three Eigen values of A and 18 is one of the Eigen values of $A^2 + 3A$. Then _____

(a) Both $A$ and $A^2 + 3A$ are invertible
(b) $A^2 + 3A$ is invertible but A is not invertible
(c) $A$ is invertible but $A^2 + 3A$ is not invertible
(d) Both A and $A^2 + 3A$ are not invertible.

[CSIR]

linear-algebra eigen-value matrix

# Answer Keys

| | |
|---|---|
| 12.0.1 | Q-Q |

| | |
|---|---|
| 12.1.1 | Q-Q |

## 13.0.1 UGC NET CSE | September 2013 | Part 3 | Question: 38 top

How many people must there be in a room before there is a 50% chance that two of them were born on the same day of the year?

A. At least 23 B. At least 183 C. At least 366 D. At least 730

probability ugcnetcse-sep2013-paper3

Answer key

## 13.0.2 UGC NET CSE | Junet 2015 | Part 2 | Question: 2 top

Considering an experiment of tossing two fair dice, one black and one red. What is the probability that the number on the black die divides the number on red die?

A. $\frac{22}{36}$ B. $\frac{12}{36}$ C. $\frac{14}{36}$ D. $\frac{6}{36}$

ugcnetcse-june2015-paper2 probability

Answer key

## 13.0.3 UGC NET CSE | June 2016 | Part 2 | Question: 4 top

There are three cards in a box. Both sides of one card are black, both sides of one card are red and the third card has one black side and one red side. We pick a card at random and observe only one side. What is the probability that the opposite side is the same colour as the one side we observed?

A. 3/4 B. 2/3 C. 1/2 D. 1/3

ugcnetcse-june2016-paper2 engineering-mathematics probability

Answer key

## 13.0.4 UGC NET CSE | December 2011 | Part 2 | Question: 49 top

What is the probability of choosing correctly an unknown integer between $0$ and $9$ with $3$ chances ?

A. $\frac{963}{1000}$ B. $\frac{973}{1000}$ C. $\frac{983}{1000}$ D. $\frac{953}{1000}$

ugcnetcse-dec2011-paper2 probability

Answer key

## 13.0.5 UGC NET CSE | August 2016 | Part 2 | Question: 4 top

What is the probability that a randomly selected bit string of length 10 is a palindrome ?

A. $\frac{1}{64}$ B. $\frac{1}{32}$ C. $\frac{1}{8}$ D. $\frac{1}{4}$

ugcnetcse-aug2016-paper2 probability

Answer key

## 13.0.6 UGC NET CSE | August 2016 | Part 3 | Question: 54 top

An experimental file server is up $75\%$ of the time and down for $25\%$ of the time due to bugs. How many times does this file server have to be replicated to give an availability of at least $99\%$ ?

A. $2$ B. $4$ C. $8$ D. $16$

ugcnetcse-aug2016-paper3 probability

Answer key

### 13.0.7 UGC NET CSE | July 2018 | Part 2 | Question: 84 top

Digital data received from a sensor can fill up 0 to 32 buffers. Let the sample space be $S = \{0, 1, 2, \ldots, 32\}$ where the sample $j$ denote that $j$ of the buffers are full and $p(i) = \frac{1}{562}(33 - i)$. Let A denote the event that the even number of buffers are full. Then $P(A)$ is

A. 0.515 B. 0.785 C. 0.758 D. 0.485

ugcnetcse-july2018-paper2 probability

Answer key

### 13.0.8 UGC NET CSE | July 2018 | Part 2 | Question: 80 top

Consider the set of all possible five-card poker hands dealt fairly from a standard deck of fifty-two cards. How many atomic events are there in the joint probability distribution?

A. 2, 598, 960 B. 3, 468, 960 C. 3, 958, 590 D. 2, 645, 590

ugcnetcse-july2018-paper2 probability

Answer key

### 13.0.9 UGC NET CSE | December 2018 | Part 2 | Question: 3 top

A box contains six red balls and four green balls. Four balls are selected at random from the box. What is the probability that two of the selected balls will be red and two will be in green?

A. $\frac{1}{14}$ B. $\frac{3}{7}$ C. $\frac{1}{35}$ D. $\frac{1}{9}$

ugcnetcse-dec2018-paper2 probability

Answer key

### 13.0.10 UGC NET CSE | December 2007 | Part 2 | Question: 1 top

A box contains six red balls and four green balls. Four balls are selected at random from the box. What is the probability that two of the selected balls are red and two are green ?

A. $\frac{3}{7}$ B. $\frac{4}{7}$ C. $\frac{5}{7}$ D. $\frac{6}{7}$

ugcnetcse-dec2007-paper2

Answer key

## 13.1 Binary Tree (1) top

### 13.1.1 Binary Tree: UGC NET CSE | July 2018 | Part 2 | Question: 25 top

A text is made up of the characters A, B, C, D, E each occurring with the probability 0.08, 0.40, 0.25, 0.15 and 0.12 respectively. The optimal coding will have the average length of

A. 2.4 B. 1.87 C. 3.0 D. 2.15

ugcnetcse-july2018-paper2 probability binary-tree data-structures

Answer key

## 13.2 Joint Distribution (1) top

### 13.2.1 Joint Distribution: UGC NET CSE | December 2018 | Part 2 | Question: 100 top

A full joint distribution for the Toothache, Cavity and Catch is given in the table below.

| | Toothache | | ¬ Toothache | |
|---|---|---|---|---|
| | Catch | ¬ Catch | Catch | ¬ Catch |
| Cavity | $0.108$ | $0.012$ | $0.072$ | $0.008$ |
| ¬ Cavity | $0.016$ | $0.064$ | $0.144$ | $0.576$ |

What is the probability of Cavity, given evidence of Toothache?

A. $\langle 0.2, 0.8 \rangle$
B. $\langle 0.4, 0.8 \rangle$
C. $\langle 0.6, 0.8 \rangle$
D. $\langle 0.6, 0.4 \rangle$

ugcnetcse-dec2018-paper2 joint-distribution probability non-gate

Answer key

## 13.3 Poisson Distribution (1) top

### 13.3.1 Poisson Distribution: UGC NET CSE | December 2011 | Part 2 | Question: 27 top

The multiuser operating system, $20$ requests are made to use a particular resource per hour, on an average the probability that no request are made in $45$ minutes is

A. $e^{-15}$
B. $e^{-5}$
C. $1-e^{-5}$
D. $1-e^{-10}$

ugcnetcse-dec2011-paper2 probability poisson-distribution

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 13.0.1 | A | 13.0.2 | C | 13.0.3 | B | 13.0.4 | Q-Q | 13.0.5 | Q-Q |
| 13.0.6 | Q-Q | 13.0.7 | Q-Q | 13.0.8 | Q-Q | 13.0.9 | Q-Q | 13.0.10 | Q-Q |
| 13.1.1 | Q-Q | 13.2.1 | Q-Q | 13.3.1 | A | | | | |

## 14 General Aptitude: Quantitative Aptitude (25)

### 14.0.1 UGC NET Paper-1 DEC 14 (average annual growth rate) top

For a country CO2 emissions (million metric tons) from various sectors are given in the following table.

| Year | Power | Sector Industry | Commercial | Agriculture | Domestic |
|---|---|---|---|---|---|
| 2005 | 500 | 200 | 150 | 80 | 100 |
| 2006 | 600 | 300 | 200 | 90 | 110 |
| 2007 | 650 | 320 | 250 | 100 | 120 |
| 2008 | 700 | 400 | 300 | 150 | 150 |
| 2009 | 800 | 450 | 320 | 200 | 180 |

What is the average annual growth rate of CO2 emissions in power sector ?
(A) ~12.57% (B) ~16.87%
(C) ~30.81% (D) ~50.25%

### 14.0.2 UGC NET p1sep2013 top

The world population growth rate at a certain reference year was 3.5%. Assuming exponential growth of population, after how many years, the population of the world would have increased by a factor 16 ?
(A) ~ 80 years (B) ~ 40 years
(C) ~ 160 years (D) ~ 320 years

*Answer: A*
could you please explain the step?

Answer key

### 14.0.3 UGC NET CSE | November 2017 | Part 2 | Question: 1 top

If the time is now $4$ O' clock, what will be the time $101$ hours from now?

A. $9$ O' clock B. $8$ O' clock C. $5$ O' clock D. $4$ O' clock

ugcnetcse-nov2017-paper2

Answer key

## 14.1 Data Interpretation (5) top

### 14.1.1 Data Interpretation: UGC NET CSE | October 2020 | Part 1 | Question: 1 top

The following table shows total number of students in the Department of the Institute along with percentage of Females and Male students. Answer the question based on the data given below:

| Department | Total No. of Students | Percentage of Female | Percentage of Male |
|---|---|---|---|
| Computer | 840 | 45 | 55 |
| Civil | 220 | 35 | 65 |
| Mech. | 900 | 23 | 77 |
| Electrical | 360 | 65 | 35 |
| Electronics | 450 | 44 | 56 |
| Mining | 540 | 40 | 60 |

What is the respective ratio of the number of females in Mechanical Department to the number of females in

Electronics Department?

A. $4:3$ B. $23:22$ C. $24:21$ D. $23:21$

ugcnetcse-oct2020-paper1 general-aptitude quantitative-aptitude data-interpretation

Answer key

## 14.1.2 Data Interpretation: UGC NET CSE | October 2020 | Part 1 | Question: 2 top

The following table shows total number of students in the Department of the Institute along with percentage of Females and Male students. Answer the question based on the data given below:

| Department | Total No. of Students | Percentage of Female | Percentage of Male |
|---|---|---|---|
| Computer | 840 | 45 | 55 |
| Civil | 220 | 35 | 65 |
| Mech | 900 | 23 | 77 |
| Electrical | 360 | 65 | 35 |
| Electronics | 450 | 44 | 56 |
| Mining | 540 | 40 | 60 |

What is the total number of students in all the Departments?

A. 2210 B. 3210 C. 3400 D. 3310

ugcnetcse-oct2020-paper1 general-aptitude quantitative-aptitude data-interpretation

Answer key

## 14.1.3 Data Interpretation: UGC NET CSE | October 2020 | Part 1 | Question: 3 top

The following table shows total number of students in the Department of the Institute along with percentage of Females and Male students. Answer the question based on the data given below:

| Department | Total No. of Students | Percentage of Female | Percentage of Male |
|---|---|---|---|
| Computer | 840 | 45 | 55 |
| Civil | 220 | 35 | 65 |
| Mech | 900 | 23 | 77 |
| Electrical | 360 | 65 | 35 |
| Electronics | 450 | 44 | 56 |
| Mining | 540 | 40 | 60 |

What is the total number of male students in Computer and Mining Department together?

A. 266 B. 886 C. 786 D. 686

ugcnetcse-oct2020-paper1 general-aptitude quantitative-aptitude data-interpretation

Answer key

## 14.1.4 Data Interpretation: UGC NET CSE | October 2020 | Part 1 | Question: 4 top

The following table shows total number of students in the Department of the Institute along with percentage of Females and Male students. Answer the question based on the data given below:

| Department | Total No. of Students | Percentage of Female | Percentage of Male |
|---|---|---|---|
| Computer | 840 | 45 | 55 |
| Civil | 220 | 35 | 65 |
| Mech | 900 | 23 | 77 |
| Electrical | 360 | 65 | 35 |
| Electronics | 450 | 44 | 56 |
| Mining | 540 | 40 | 60 |

What is the ratio of the number of females in Civil and Electrical departments together to the number of males in the same departments together?

A. $311 : 270$ B. $329 : 261$ C. $411 : 469$ D. $311 : 269$

ugcnetcse-oct2020-paper1 general-aptitude quantitative-aptitude data-interpretation

Answer key

### 14.1.5 Data Interpretation: UGC NET CSE | October 2020 | Part 1 | Question: 5 top

The following table shows total number of students in the Department of the Institute along with percentage of Females and Male students. Answer the question based on the data given below:

| Department | Total No. of Students | Percentage of Female | Percentage of Male |
|---|---|---|---|
| Computer | 840 | 45 | 55 |
| Civil | 220 | 35 | 65 |
| Mech | 900 | 23 | 77 |
| Electrical | 360 | 65 | 35 |
| Electronics | 450 | 44 | 56 |
| Mining | 540 | 40 | 60 |

What is the average percentage of female students in the whole institute?

A. $42.0\%$ B. $41.0\%$ C. $43.0\%$ D. $41.5\%$

ugcnetcse-oct2020-paper1 general-aptitude quantitative-aptitude data-interpretation

Answer key

## 14.2 Number System (1) top

### 14.2.1 Number System: UGC NET CSE | June 2011 | Part 2 | Question: 1 top

Any integer composed of $3^n$ identical digits divisible by

A. $2^n$ B. $3^n$ C. $5^n$ D. $7^n$

ugcnetcse-dec2011-paper2 quantitative-aptitude number-system

Answer key

## 14.3 Percentage (1) top

### 14.3.1 Percentage: UGC NET CSE | December 2015 | Part 2 | Question: 32 top

Suppose that from given statistics, it is known that meningitis causes stiff neck 50% of the time, that the proportion of persons having meningitis is $\frac{1}{50000}$, and that the proportion od people having stiff neck is $\frac{1}{20}$. Then the percentage of people who had meningtis and complain about stiff neck is:

A. 0.01% B. 0.02% C. 0.04% D. 0.05%

ugcnetcse-dec2015-paper2 quantitative-aptitude percentage

Answer key

## 14.4 Quadratic Equations (1) top

### 14.4.1 Quadratic Equations: UGC NET CSE | October 2020 | Part 2 | Question: 8 top

What is the radix of the numbers if the solution to the quadratic equation $x^2 - 10x + 26 = 0$ is $x = 4$ and $x = 7$?

A. $8$ B. $9$ C. $10$ D. $11$

ugcnetcse-oct2020-paper2 quadratic-equations

Answer key

## 14.5 Quantitative Aptitude (14) top

### 14.5.1 Quantitative Aptitude: UGC NET CSE | December 2010 | Part 2 | Question: 1 top

The number of integers between $1$ and $250$ that are divisible by $2, 5$ and $7$ is

A. $2$ B. $3$ C. $5$ D. $8$

ugcnetcse-dec2010-paper2 quantitative-aptitude

Answer key

### 14.5.2 Quantitative Aptitude: UGC NET CSE | December 2010 | Part 2 | Question: 5 top

Consider the problem of connecting $19$ lamps to a single electric outlet by using extension cords each of which has four outlets. The number of extension cords required is

A. $4$ B. $5$ C. $6$ D. $7$

ugcnetcse-dec2010-paper2 quantitative-aptitude

Answer key

### 14.5.3 Quantitative Aptitude: UGC NET CSE | December 2014 | Part 2 | Question: 04 top

A computer program selects an integer in the set $\{k : 1 \leq k \leq 10,00,000\}$ at random and prints out the result. This process is repeated 1 million times. What is the probability that the value k = 1 appears in the printout atleast once ?

A. $0.5$ B. $0.704$ C. $0.632121$ D. $0.68$

ugcnetcse-dec2014-paper2 quantitative-aptitude

Answer key

### 14.5.4 Quantitative Aptitude: UGC NET CSE | July 2018 | Part 2 | Question: 75 top

Consider a vocabulary with only four propositions A, B, C and D. How many models are there for the following sentence?

$B \vee C$

A. 10 B. 12 C. 15 D. 16

ugcnetcse-july2018-paper2 quantitative-aptitude

Answer key

### 14.5.5 Quantitative Aptitude: UGC NET CSE | June 2019 | Part 1 | Question: 22 top

For all integers $y > 1$, $\langle y \rangle = 2y + (2y - 1) + (2y - 2) + \cdots + 1$.

What is the value of $\langle 3 \rangle \times \langle 2 \rangle$? Where $\times$ is a multiplication operator?

A. $116$ B. $210$ C. $263$ D. $478$

ugcnetcse-june2019-paper1 general-aptitude quantitative-aptitude

Answer key

## 14.5.6 Quantitative Aptitude: UGC NET CSE | June 2019 | Part 1 | Question: 23 top

If $152$ is divided into four parts proportional to $3$, $4$, $5$ and $7$, then the smallest part is

A. $29$ B. $26$ C. $25$ D. $24$

ugcnetcse-june2019-paper1 general-aptitude quantitative-aptitude

Answer key

## 14.5.7 Quantitative Aptitude: UGC NET CSE | June 2019 | Part 1 | Question: 24 top

In a new budget, the price of petrol rose by $25\%$. By how much percent must a person reduce his consumption so that his expenditure on it does not increase?

A. $10\%$ B. $15\%$ C. $20\%$ D. $25\%$

ugcnetcse-june2019-paper1 general-aptitude quantitative-aptitude

Answer key

## 14.5.8 Quantitative Aptitude: UGC NET CSE | June 2019 | Part 1 | Question: 25 top

A sum of money doubles at compound interest in 6 years. In how many years it will become $16$ times?

A. $16$ years B. $24$ years C. $48$ years D. $96$ years

ugcnetcse-june2019-paper1 general-aptitude quantitative-aptitude

Answer key

## 14.5.9 Quantitative Aptitude: UGC NET CSE | June 2019 | Part 1 | Question: 27 top

Given below are two premises with four conclusions drawn from them. Which of the following conclusions could be validly drawn from the premises?

Premises:

i. No paper is pen
ii. Some paper are handmade

Conclusions:

A. All paper are handmade
B. Some handmade are pen
C. Some handmade are not pen
D. All handmade are paper

ugcnetcse-june2019-paper1 general-aptitude quantitative-aptitude

Answer key

## 14.5.10 Quantitative Aptitude: UGC NET CSE | June 2019 | Part 1 | Question: 31 top

Consider the following table that shows the number (in lakhs) of different sizes of LED television sets sold by a company over the last seven years from $2012$ to $2018$. Answer the question based on the data contained in the table:

Sale of LED Television sets (in lakhs) of different sizes (in inches)

| Year | Size of LED Television sets (in inches) | | | | |
|---|---|---|---|---|---|
| | 22" | 24" | 32" | 40" | 49" |
| 2012 | 85 | 154 | 124 | 112 | 118 |
| 2013 | 100 | 136 | 112 | 94 | 136 |
| 2014 | 106 | 124 | 85 | 115 | 145 |
| 2015 | 115 | 100 | 160 | 100 | 85 |
| 2016 | 100 | 85 | 145 | 85 | 100 |
| 2017 | 115 | 70 | 175 | 55 | 130 |
| 2018 | 125 | 95 | 170 | 110 | 155 |

What was the approximate percentage increase/decrease in the sales of $32$-inch LED Television sets in $2017$ compared to that in $2013$?

A. $36\%$ B. $56\%$ C. $57\%$ D. $64\%$

ugcnetcse-june2019-paper1 general-aptitude quantitative-aptitude

Answer key

## 14.5.11 Quantitative Aptitude: UGC NET CSE | June 2019 | Part 1 | Question: 32 top

Consider the following table that shows the number (in lakhs) of different sizes of LED television sets sold by a company over the last seven years from $2012$ to $2018$. Answer the question based on the data contained in the table:

Sale of LED Television sets (in lakhs) of different sizes (in inches)

| Year | Size of LED Television sets (in inches) | | | | |
|---|---|---|---|---|---|
| | 22" | 24" | 32" | 40" | 49" |
| 2012 | 85 | 154 | 124 | 112 | 118 |
| 2013 | 100 | 136 | 112 | 94 | 136 |
| 2014 | 106 | 124 | 85 | 115 | 145 |
| 2015 | 115 | 100 | 160 | 100 | 85 |
| 2016 | 100 | 85 | 145 | 85 | 100 |
| 2017 | 115 | 70 | 175 | 55 | 130 |
| 2018 | 125 | 95 | 170 | 110 | 155 |

For which size LED Television sets in the total sales of all seven years the maximum?

A. $22$ – inch Television
B. $24$ – inch Television
C. $32$ – inch Television
D. $49$ – inch Television

ugcnetcse-june2019-paper1 general-aptitude quantitative-aptitude

Answer key

## 14.5.12 Quantitative Aptitude: UGC NET CSE | June 2019 | Part 1 | Question: 33 top

Consider the following table that shows the number (in lakhs) of different sizes of LED television sets sold by a company over the last seven years from $2012$ to $2018$. Answer the question based on the data contained in the table:

Sale of LED Television sets (in lakhs) of different sizes (in inches)

| Year | Size of LED Television sets (in inches) | | | | |
|---|---|---|---|---|---|
| | 22" | 24" | 32" | 40" | 49" |
| 2012 | 85 | 154 | 124 | 112 | 118 |
| 2013 | 100 | 136 | 112 | 94 | 136 |
| 2014 | 106 | 124 | 85 | 115 | 145 |
| 2015 | 115 | 100 | 160 | 100 | 85 |
| 2016 | 100 | 85 | 145 | 85 | 100 |
| 2017 | 115 | 70 | 175 | 55 | 130 |
| 2018 | 125 | 95 | 170 | 110 | 155 |

What is the difference in the number of $40$-inch Television sets sold in $2013$ and $2018$

A. $1,600,000$ B. $1,500,000$ C. $15,000,000$ D. $16,000,000$

ugcnetcse-june2019-paper1 general-aptitude quantitative-aptitude

Answer key

## 14.5.13 Quantitative Aptitude: UGC NET CSE | June 2019 | Part 1 | Question: 34 top

Consider the following table that shows the number (in lakhs) of different sizes of LED television sets sold by a company over the last seven years from $2012$ to $2018$. Answer the question based on the data contained in the table:

Sale of LED Television sets (in lakhs) of different sizes (in inches)

| Year | Size of LED Television sets (in inches) | | | | |
|---|---|---|---|---|---|
| | 22" | 24" | 32" | 40" | 49" |
| 2012 | 85 | 154 | 124 | 112 | 118 |
| 2013 | 100 | 136 | 112 | 94 | 136 |
| 2014 | 106 | 124 | 85 | 115 | 145 |
| 2015 | 115 | 100 | 160 | 100 | 85 |
| 2016 | 100 | 85 | 145 | 85 | 100 |
| 2017 | 115 | 70 | 175 | 55 | 130 |
| 2018 | 125 | 95 | 170 | 110 | 155 |

What is the total sale of Television sets of size $49$-inches (in lakhs) over all the seven years?

A. $912$ B. $896$ C. $879$ D. $869$

ugcnetcse-june2019-paper1 general-aptitude quantitative-aptitude

Answer key

### 14.5.14 Quantitative Aptitude: UGC NET CSE | June 2019 | Part 1 | Question: 35 top

Consider the following table that shows the number (in lakhs) of different sizes of LED television sets sold by a company over the last seven years from $2012$ to $2018$. Answer the question based on the data contained in the table:

Sale of LED Television sets (in lakhs) of different sizes (in inches)

| Year | Size of LED Television sets (in inches) | | | | |
|---|---|---|---|---|---|
| | 22" | 24" | 32" | 40" | 49" |
| 2012 | 85 | 154 | 124 | 112 | 118 |
| 2013 | 100 | 136 | 112 | 94 | 136 |
| 2014 | 106 | 124 | 85 | 115 | 145 |
| 2015 | 115 | 100 | 160 | 100 | 85 |
| 2016 | 100 | 85 | 145 | 85 | 100 |
| 2017 | 115 | 70 | 175 | 55 | 130 |
| 2018 | 125 | 95 | 170 | 110 | 155 |

For which LED Television set is the total sales of all the seven years the minimum?

A. $22$ - inch Television
B. $24$ - inch Television
C. $49$ - inch Television
D. $40$ - inch Television

ugcnetcse-june2019-paper1 general-aptitude quantitative-aptitude

Answer key

## Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 14.0.1 | Q-Q | 14.0.2 | Q-Q | 14.0.3 | A | 14.1.1 | B | 14.1.2 | D |
| 14.1.3 | C | 14.1.4 | D | 14.1.5 | A | 14.2.1 | Q-Q | 14.3.1 | B |
| 14.4.1 | D | 14.5.1 | B | 14.5.2 | Q-Q | 14.5.3 | C | 14.5.4 | Q-Q |
| 14.5.5 | B | 14.5.6 | D | 14.5.7 | C | 14.5.8 | B | 14.5.9 | C |
| 14.5.10 | B | 14.5.11 | C | 14.5.12 | A | 14.5.13 | D | 14.5.14 | D |

# 15 General Aptitude: Verbal Aptitude (8)

## 15.0.1 UGC NET CSE | July 2018 | Part 2 | Question: 79 top

A knowledge base contains just one sentence, $\exists x\ \mathrm{AsHighAs}\ (x, \mathrm{Everest})$. Consider the following two sentences obtained after applying existential instantiation.

a. AsHighAs (Everest, Everest)
b. AsHighAs (Kilimanjaro, Everest)

Which of the following is correct with respect to the above sentences?

A. Both sentence a and sentence b are sound conclusions
B. Both sentence a and sentence b are unsound conclusions
C. Sentence a is sound but sentence b is unsound
D. Sentence a is unsound but sentence b is sound

ugcnetcse-july2018-paper2 verbal-aptitude

Answer key

## 15.0.2 UGC NET CSE | June 2019 | Part 1 | Question: 28 top

'All republics are grateful' and 'Some republics are not grateful' cannot both be true, and they cannot both be false. This is called as

A. contraries B. contradictories C. subaltern D. super altern

ugcnetcse-june2019-paper1 general-aptitude verbal-aptitude

Answer key

## 15.0.3 UGC NET CSE | June 2019 | Part 1 | Question: 26 top

If the proposition 'Houses are not bricks' is taken to be False then which of the following propositions can be True?

A. All houses are bricks B. No house is brick C. Some houses are bricks D. Some houses are not bricks

Select the correct answer from the options given below:

A. b and c B. a and d C. b only D. c only

ugcnetcse-june2019-paper1 general-aptitude verbal-aptitude

Answer key

## 15.0.4 UGC NET CSE | June 2019 | Part 1 | Question: 21 top

Oar is to rowboat as foot is to

A. running B. sneaker C. skateboard D. jumping

ugcnetcse-june2019-paper1 general-aptitude verbal-aptitude

Answer key

# 15.1 Logical Reasoning (2) top

## 15.1.1 Logical Reasoning: UGC NET CSE | June 2019 | Part 1 | Question: 29 top

Identify the reasoning in the following argument :

'Use of teaching aids in the classroom to enhance learning is important in a similar way as that of the use of ICT for production of knowledge'.

A. Hypothetical B. Analogical C. Inductive D. Deductive

ugcnetcse-june2019-paper1 general-aptitude logical-reasoning

Answer key

### 15.1.2 Logical Reasoning: UGC NET CSE | June 2019 | Part 1 | Question: 30 top

The proposition 'No historians are non-mathematician' is equivalent to which of the following proposition?

(1) All historians are mathematicians

(2) No historians are mathematicians

(3) Some historians are mathematicians

(4) Some historians are not mathematicians

The proposition 'No historians are non-mathematician' is equivalent to which of the following proposition?

A. All historians are mathematicians
B. No historians are mathematicians
C. Some historians are mathematicians
D. Some historians are not mathematicians

ugcnetcse-june2019-paper1 general-aptitude logical-reasoning

Answer key

## 15.2 Quantitative Aptitude (2) top

### 15.2.1 Quantitative Aptitude: UGC NET CSE | June 2013 | Part 3 | Question: 70 top

Given two jugs of capacities 5 litres and 3 litres with no measuring marks on them. Then the minimum number of states to measure 4 litres of water will be

A. 3 B. 4 C. 5 D. 7

ugcnetcse-june2013-paper3 quantitative-aptitude general-aptitude

Answer key

### 15.2.2 Quantitative Aptitude: UGC NET CSE | October 2020 | Part 2 | Question: 80 top

Given below are two statements:

Statement $I$: $5$ divides $n^5 - n$ wherever $n$ is a nonnegative integer

Statement $II$: $6$ divides $n^3 - n$ whenever $n$ is a nonnegative integer

In the light of the above statements, choose the correct answer from the options given below

A. Both Statement $I$ and Statement $II$ are correct
B. Both Statement $I$ and Statement $II$ are incorrect
C. Statement $I$ is correct but Statement $II$ is incorrect
D. Statement $I$ is incorrect but Statement $II$ is correct

ugcnetcse-oct2020-paper2 general-aptitude quantitative-aptitude

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 15.0.1 | Q-Q | 15.0.2 | B | 15.0.3 | D | 15.0.4 | C | 15.1.1 | B |
| 15.1.2 | A | 15.2.1 | D | 15.2.2 | A | | | | |

# 16 Non GATE: Artificial Intelligence (45)

## 16.0.1 UGC NET CSE | June 2016 | Part 3 | Question: 75 top

A software program that infers and manipulates existing knowledge in order to generate new knowledge is known as:

A. Data dictionary
B. Reference mechanism
C. Inference engine
D. Control strategy

ugcnetcse-june2016-paper3

Answer key

## 16.0.2 UGC NET CSE | June 2016 | Part 3 | Question: 66 top

A perceptron has input weights $W_1 = -3.9$ and $W_2 = 1.1$ with threshold value $T = 0.3$. What output does it give for the input $x_1 = 1.3$ and $x_2 = 2.2$?

A. $-2.65$
B. $-2.30$
C. $0$
D. $1$

ugcnetcse-june2016-paper3

Answer key

# 16.1 Artificial Intelligence (15) top

## 16.1.1 Artificial Intelligence: UGC NET CSE | December 2013 | Part 3 | Question: 26 top

The mean-end analysis process centers around the detection of differences between the current state and goal state. Once such a difference is isolated, an operator that can reduce the difference must be found. But perhaps that operator cannot be applied to the current state. So a sub-problem of getting to a state in which it can be applied is set up. The kind of backward chaining in which operators are selected and then sub goals are set up to establish the precondition of operators is called

A. backward planning
B. goal stack planning
C. operator subgoaling
D. operator overloading

ugcnetcse-dec2013-paper3 artificial-intelligence

Answer key

## 16.1.2 Artificial Intelligence: UGC NET CSE | December 2015 | Part 3 | Question: 46 top

Language model used in LISP is

A. Functional programming
B. Logic programming
C. Object oriented programming
D. All of the above

ugcnetcse-dec2015-paper3 artificial-intelligence

Answer key

## 16.1.3 Artificial Intelligence: UGC NET CSE | December 2015 | Part 3 | Question: 64 top

Consider the two class classification task that consists of the following points:

Class $C_1$ : $[-1,-1],[-1,1],[1,-1]$

Class $C_2$ : $[1,1]$

The decision boundary between the two classes $C_1$ and $C_2$ using single perception is given by:

A. $x_1 - x_2 - 0.5 = 0$
B. $-x_1 - x_2 - 0.5 = 0$
C. $0.5(x_1 + x_2) - 1.5 = 0$
D. $x_1 + x_2 - 0.5 = 0$

ugcnetcse-dec2015-paper3 artificial-intelligence

Answer key

## 16.1.4 Artificial Intelligence: UGC NET CSE | January 2017 | Part 3 | Question: 55 top

Consider following two rules $\mathrm{R1}$ and $\mathrm{R2}$ in logical reasoning in Artificial Intelligence (AI):

$\mathrm{R1}$ **:** From $\alpha \supset \beta \ \frac{\text{and } \alpha}{\text{Inter } \beta}$ is known as Modulus Tollens (MT)

$\mathrm{R2}$ : From $\alpha \supset \beta \frac{\text{and } \neg\beta}{\text{Inter } \neg\alpha}$ is known as Modus Ponens(MP)

A. Only $\mathrm{R1}$ is correct.
B. Only $\mathrm{R2}$ is correct.
C. Both $\mathrm{R1}$ and $\mathrm{R2}$ are correct.
D. Neither $\mathrm{R1}$ nor $\mathrm{R2}$ is correct.

ugcnetcse-jan2017-paper3 non-gate artificial-intelligence

Answer key

## 16.1.5 Artificial Intelligence: UGC NET CSE | July 2018 | Part 2 | Question: 71 top

In artificial Intelligence (AI), an environment is uncertain if it is ___

A. Not fully observable and not deterministic
B. Not fully observable or not deterministic
C. Fully observable but not deterministic
D. Not fully observable but deterministic

ugcnetcse-july2018-paper2 artificial-intelligence

Answer key

## 16.1.6 Artificial Intelligence: UGC NET CSE | July 2018 | Part 2 | Question: 72 top

In artificial Intelligence (AI), a simple reflex agent selects actions on the basis of ___

A. current percept, completely ignoring rest of the percept history
B. rest of the percept history, completely ignoring the current percept
C. both current percept and complete percept history
D. both current percept and just previous percept

ugcnetcse-july2018-paper2 artificial-intelligence

Answer key

## 16.1.7 Artificial Intelligence: UGC NET CSE | July 2018 | Part 2 | Question: 73 top

In heuristic search algorithms in Artificial Intelligence (AI), if a collection of admissible heuristics $h_1 \ldots h_m$ is available for a problem and none of them dominates any of the others, which should we choose?

A. $h(n) = max\{h_1(n), \ldots, h_m(n)\}$
B. $h(n) = min\{h_1(n), \ldots, h_m(n)\}$
C. $h(n) = avg\{h_1(n), \ldots, h_m(n)\}$
D. $h(n) = sum\{h_1(n), \ldots, h_m(n)\}$

ugcnetcse-july2018-paper2 artificial-intelligence

Answer key

## 16.1.8 Artificial Intelligence: UGC NET CSE | July 2018 | Part 2 | Question: 74 top

Consider following sentences regarding $A^*$, an informed search strategy in Artificial Intelligence (AI).

a. $A^*$ expands all nodes with $f(n) < C^*$
b. $A^*$ expands no nodes with $f(n) \geq C^*$
c. Pruning is integral to $A^*$

Here, $C^*$ is the cost of the optimal solution path. Which of the following is correct with respect to the above statements?

A. Both statements a and statement b are true
B. Both statements a and statement c are true
C. Both statements b and statement c are true
D. All the statements a, b and c are true

ugcnetcse-july2018-paper2 artificial-intelligence

Answer key

## 16.1.9 Artificial Intelligence: UGC NET CSE | June 2012 | Part 3 | Question: 21 top

$A^*$ algorithm uses $f' = g + h'$ to estimate the cost of getting from the initial state to the goal state, where $g$ is a measure of cost getting from initial state to the current node and the function $h'$ is an estimate of the cost of getting from the current node to the goal state. To find a path involving the fewest number of steps, we should test,

A. $g = 1$ B. $g = 0$ C. $h' = 0$ D. $h' = 1$

ugcnetcse-june2012-paper3 artificial-intelligence

Answer key

## 16.1.10 Artificial Intelligence: UGC NET CSE | June 2014 | Part 3 | Question: 28 top

Match the following :

| | List – I | | List – II |
|---|---|---|---|
| a. | Expert systems | i. | Pragmatics |
| b. | Planning | ii. | Resolution |
| c. | Prolog | iii. | means-end analysis |
| d. | Natural language processing | iv. | Explanation facility |

**Codes :**

A. a-iii, b-iv, c-i, d-ii
B. a-iii, b-iv, c-ii, d-i
C. a-i, b-ii, c-iii, d-iv
D. a-iv, b-iii, c-ii, d-i

ugcnetjune2014iii artificial-intelligence

Answer key

## 16.1.11 Artificial Intelligence: UGC NET CSE | June 2014 | Part 3 | Question: 30 top

Slots and facets are used in

A. Semantic Networks B. Frames C. Rules D. All of these

ugcnetjune2014iii artificial-intelligence

Answer key

## 16.1.12 Artificial Intelligence: UGC NET CSE | Junet 2015 | Part 3 | Question: 23 top

Which of the following is false for the programming language PROLOG?

A. A PROLOG variable can only be assigned to a value once
B. PROLOG is a strongly typed language
C. The scope of a variable in PROLOG is a single clause or rule
D. The scope of a variable in PROLOG is a single query

ugcnetcse-june2015-paper3 artificial-intelligence

Answer key

## 16.1.13 Artificial Intelligence: UGC NET CSE | Junet 2015 | Part 3 | Question: 56 top

Match the following knowledge representation techniques with their applications :

| | List – I | | List – II |
|---|---|---|---|
| (a) | Frames | (i) | Pictorial representation of objects, their attributes and relationships |
| (b) | Conceptual dependencies | (ii) | To describe real world stereotype events |
| (c) | Associative networks | (iii) | Record like structures for grouping closely related knowledge |
| (d) | Scripts | (iv) | Structures and primitives to represent sentences |

**Codes :**

A. (a)-(ii), (b)-(iv), (c)-(i), (d)-(ii)
B. (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)
C. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)
D. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

ugcnetcse-june2015-paper3 artificial-intelligence

Answer key

### 16.1.14 Artificial Intelligence: UGC NET CSE | Junet 2015 | Part 3 | Question: 59 top

Match the following with respect to heuristic search techniques :

| | List – I | | List – II |
|---|---|---|---|
| (a) | Steepest-acccent Hill Climbing | (i) | Keeps track of all partial paths which can be candiadate for further explaination |
| (b) | Branch-and-bound | (ii) | Discover problem state(s) that satisfy a set of constraints |
| (c) | Constraint satisfaction | (iii) | Detects difference between current state and goal state |
| (d) | Means-end-analysis | (iv) | Considers all moves from current state and selects best move |

**Codes :**

A. (a)-(i), (b)-(iv), (c)-(iii), (d)-(ii)
B. (a)-(iv), (b)-(i), (c)-(ii), (d)-(iii)
C. (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)
D. (a)-(iv), (b)-(ii), (c)-(i), (d)-(iii)

ugcnetcse-june2015-paper3 artificial-intelligence

Answer key

### 16.1.15 Artificial Intelligence: UGC NET CSE | October 2020 | Part 2 | Question: 36 top

Which of the following is NOT true in problem solving in artificial intelligence?

A. Implements heuristic search technique
B. Solution steps are not explicit
C. Knowledge is imprecise
D. It works on or implements repetition mechanism

ugcnetcse-oct2020-paper2 non-gate artificial-intelligence

## 16.2 Artificial Neural Network (1) top

### 16.2.1 Artificial Neural Network: UGC NET CSE | December 2013 | Part 3 | Question: 30 top

An artificial neuron receives n inputs $x_1, x_2, \ldots, x_n$ with weights $w_1, w_2, \ldots, w_n$ attached to the input links. The weighted sum ____ is computed to be passed on to a non-linear filter $\phi$ called activation function to release the output.

A. $\Sigma w_i$
B. $\Sigma x_i$
C. $\Sigma w_i + \Sigma x_i$
D. $\Sigma w_i \cdot \Sigma x_i$

ugcnetcse-dec2013-paper3 machine-learning artificial-neural-network

Answer key

## 16.3 Back Propagation (1) top

### 16.3.1 Back Propagation: UGC NET CSE | December 2012 | Part 2 | Question: 46 top

Back propagation is a learning technique that adjusts weights in the neutral network by propagating weight changes.

A. Forward from source to sink
B. Backward from sink to source
C. Forward from source to hidden nodes
D. Backward from sink to hidden nodes

ugcnetcse-dec2012-paper2 machine-learning data-mining back-propagation

Answer key

## 16.4 Blocks World Problem (1) top

### 16.4.1 Blocks World Problem: UGC NET CSE | September 2013 | Part 3 | Question: 5 top

The Blocks World Problem in Artificial Intelligence is normally discussed to explain a

A. Search technique
B. Planning system
C. Constraint satisfaction system
D. Knowledge base system

ugcnetcse-sep2013-paper3 artificial-intelligence blocks-world-problem

Answer key

## 16.5 Chaining (1) top

### 16.5.1 Chaining: UGC NET CSE | December 2015 | Part 3 | Question: 8 top

Forward chaining systems are ____ where as backward chaining systems are ____

A. Data driven, Data driven
B. Goal driven, Data driven
C. Data driven, Goal driven
D. Goal driven, Goal driven

ugcnetcse-dec2015-paper3 artificial-intelligence chaining

Answer key

## 16.6 Expert System (2) top

### 16.6.1 Expert System: UGC NET CSE | December 2012 | Part 3 | Question: 67 top

An expert system shell is an expert system without

A. domain knowledge
B. explanation facility
C. reasoning with knowledge
D. all of the above

ugcnetcse-dec2012-paper3 artificial-intelligence expert-system

Answer key

### 16.6.2 Expert System: UGC NET CSE | December 2015 | Part 3 | Question: 45 top

Reasoning strategies used in expert systems include

A. Forward chaining, backward chaining and problem reduction
B. Forward chaining, backward chaining and boundary mutation
C. Forward chaining, backward chaining and back propagation
D. Forward chaining, problem reduction and boundary mutation

ugcnetcse-dec2015-paper3 artificial-intelligence expert-system

Answer key

## 16.7 Fuzzy Logic (1) top

### 16.7.1 Fuzzy Logic: UGC NET CSE | June 2019 | Part 2 | Question: 94 top

A fuzzy conjunction operator denoted as $t(x, y)$ and a fuzzy disjunction operator denoted as $s(x, y)$ form a dual pair if they satisfy the condition:

A. $t(x,y) = 1 - s(x,y)$
B. $t(x,y) = s(1-x, 1-y)$
C. $t(x,y) = 1 - s(1-x, 1-y)$
D. $t(x,y) = s(1+x, 1+y)$

ugcnetcse-june2019-paper2 artificial-intelligence fuzzy-logic

Answer key

## 16.8 Genetic Algorithms (1) top

### 16.8.1 Genetic Algorithms: UGC NET CSE | June 2019 | Part 2 | Question: 97 top

Consider the following:

a. Evolution
b. Selection
c. Reproduction
d. Mutation

Which of the following are found in genetic algorithms?

A. b, c and d only
B. b and d only
C. a, b, c and d
D. a, b and d only

ugcnetcse-june2019-paper2 artificial-intelligence genetic-algorithms

Answer key

## 16.9 Heuristic Search (1) top

### 16.9.1 Heuristic Search: UGC NET CSE | December 2013 | Part 3 | Question: 25 top

If h* represents an estimate from the cost of getting from the current node N to the goal node and h represents actual cost of getting from the current node to the goal node, then A* algorithm gives an optimal solution if

A. h* is equal to h
B. h* overestimates h
C. h* underestimates h
D. none of these

ugcnetcse-dec2013-paper3 artificial-intelligence heuristic-search

Answer key

## 16.10 Intelligence (1) top

### 16.10.1 Intelligence: Required Artificial Intelligence resources for UGC NET top

Hi

I need some useful resources of AI for upcoming UGC NET exam.

Currently, I am reading from Rich and Knight, Is it enough?

Please let me know about any good quality books or video lectures.

artificial intelligence ugc-net

Answer key

## 16.11 Linear Programming (1) top

### 16.11.1 Linear Programming: UGC NET CSE | September 2013 | Part 3 | Question: 13 top

If an artificial variable is present in the 'basic variable' of optimal simplex table then the solution is

A. Alternative solution
B. Infeasible solution
C. Unbounded solution
D. Degenerate solution

ugcnetcse-sep2013-paper3 artificial-intelligence linear-programming

Answer key

## 16.12 Machine Learning (4) top

### 16.12.1 Machine Learning: UGC NET CSE | December 2012 | Part 3 | Question: 73 top

Match the following:

| | |
|---|---|
| a. Supervised learning | 1. The decision system receives rewards for its action at the end of a sequence of steps |
| b. Unsupervised learning | 2. Manual labels of inputs are not used |
| c. Re-inforcement learning | 3. Manual labels of inputs are used |
| d. Inductive learning | 4. System learns by example |

| | a | b | c | d |
|---|---|---|---|---|
| A | 1 | 2 | 3 | 4 |
| B | 2 | 3 | 1 | 4 |
| C | 3 | 2 | 4 | 1 |
| D | 3 | 2 | 1 | 4 |

ugcnetcse-dec2012-paper3 machine-learning

Answer key

## 16.12.2 Machine Learning: UGC NET CSE | December 2014 | Part 3 | Question: 72 top

Match the following learning modes $w.r.t.$ characteristics of available information for learning :

| | |
|---|---|
| a. Supervised | i. Instructive information on desired responses, explicitly specified by a teacher. |
| b. Recording | ii. A priori design information for memory storing |
| c. Reinforcement | iii. Partial information about desired responses, or only “right” or “wrong” evaluative information |
| d. Unsupervised | iv. No information about desired responses |

Codes :

| | a | b | c | d |
|---|---|---|---|---|
| A. | i | ii | iii | iv |
| B. | i | iii | ii | iv |
| C. | ii | iv | iii | i |
| D. | ii | iii | iv | i |

ugcnetcse-dec2014-paper3 artificial-intelligence machine-learning

Answer key

## 16.12.3 Machine Learning: UGC NET CSE | June 2012 | Part 3 | Question: 2 top

In Delta Rule for error minimization

A. weights are adjusted w.r.to change in the output
B. weights are adjusted w.r.to difference between desired output and actual output
C. weights are adjusted w.r.to difference between output and output
D. none of the above

ugcnetcse-june2012-paper3 artificial-intelligence machine-learning

Answer key

## 16.12.4 Machine Learning: UGC NET CSE | June 2014 | Part 3 | Question: 09 top

Perceptron learning, Delta learning and $LMS$ learning are learning methods which falls under the category of

A. Error correction learning - learning with a teacher

B. Reinforcement learning - learning with a critic
C. Hebbian learning
D. Competitive learning - learning without a teacher

ugcnetjune2014iii machine-learning

Answer key

## 16.13 Map Coloring (1) top

### 16.13.1 Map Coloring: UGC NET CSE | June 2013 | Part 3 | Question: 71 top

The map colouring problem can be solved using which of the following technique?

A. Means-end analysis
B. Constraint satisfaction
C. AO* search
D. Breadth first search

ugcnetcse-june2013-paper3 artificial-intelligence map-coloring

Answer key

## 16.14 Means End (1) top

### 16.14.1 Means End: UGC NET CSE | September 2013 | Part 3 | Question: 6 top

Means-Ends Analysis process centres around the detection of difference between the current state and the goal state. Once such a difference is found, then to reduce the difference one applies

A. a forward search that can reduce the difference
B. a backward search that can reduce the difference
C. a bidirectional search that can reduce the difference
D. an operator that can reduce the difference

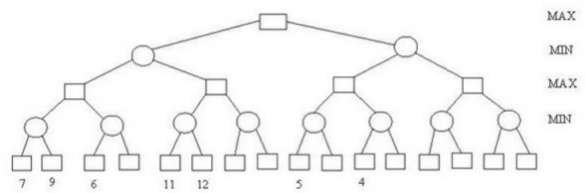
ugcnetcse-sep2013-paper3 artificial-intelligence means-end analysis

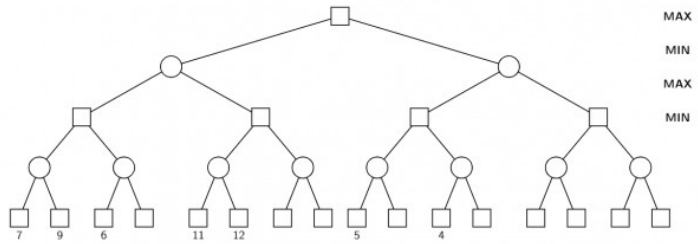
Answer key

## 16.15 Minimax Procedure (1) top

### 16.15.1 Minimax Procedure: UGC NET CSE | June 2019 | Part 2 | Question: 91 top

Consider the game tree given below:




Here ◯ and ☐ represents MIN and MAX nodes respectively. The value of the root node of the game tree is

A. $4$
B. $7$
C. $11$
D. $12$

ugcnetcse-june2019-paper2 artificial-intelligence minimax-procedure

Answer key

## 16.16 Neural Network (3) top

### 16.16.1 Neural Network: UGC NET CSE | December 2012 | Part 3 | Question: 9 top

You are given an OR problem and XOR problem to solve. Then, which one of the following statements is true?

A. Both OR and XOR problems can be solved using single layer perception
B. OR can be solved using single layer perception and XOR problem can be solved using self organizing maps
C. OR problem can be solved using radial basis function and XOR problem can be solved using single layer perception
D. OR can be solved using single layer perception and XOR problem can be solved using radial basis function

ugcnetcse-dec2012-paper3 artificial-intelligence neural-network

Answer key

### 16.16.2 Neural Network: UGC NET CSE | June 2019 | Part 2 | Question: 98 top

Which of the following is an example of unsupervised neural network?

A. Back-propagation network
B. Hebb network
C. Associative memory network
D. Self-organizing feature map

ugcnetcse-june2019-paper2 artificial-intelligence neural-network

Answer key

### 16.16.3 Neural Network: UGC NET CSE | September 2013 | Part 3 | Question: 28 top

In a single perceptron, the updation rule of weight vector is given by

A. $w(n+1) = w(n) + \eta[d(n) - y(n)]$
B. $w(n+1) = w(n) - \eta[d(n) - y(n)]$
C. $w(n+1) = w(n) + \eta[d(n) - y(n)] * x(n)$
D. $w(n+1) = w(n) - \eta[d(n) - y(n)] * x(n)$

ugcnetcse-sep2013-paper3 neural-network machine-learning

Answer key

## 16.17 Planning (1) top

### 16.17.1 Planning: UGC NET CSE | July 2018 | Part 2 | Question: 78 top

Consider the following two sentences:

a. The planning graph data structure can be used to give a better heuristic for a planning problem
b. Dropping negative effects from every action schema in a planning problem results in a relaxed problem

Which of the following is correct with respect to the above sentences?

A. Both sentence a and sentence b are false
B. Both sentence a and sentence b are true
C. Sentence a is true but sentence b is false
D. Sentence a is false but sentence b is true

ugcnetcse-july2018-paper2 planning

Answer key

## 16.18 Prolog (2) top

### 16.18.1 Prolog: UGC NET CSE | June 2013 | Part 3 | Question: 67 top

Which one of the following is the correct implementation of the meta-predicate “not” in PROLOG (Here G represents a goal)?

A. not(G):- !, call(G), fail. not(G).
B. not(G):- call(G), !, fail. not(G).
C. not(G):- call(G), fail, !, not(G).
D. not(G):- call(G), !, fail.not(G):- !.

ugcnetcse-june2013-paper3 artificial-intelligence prolog

### 16.18.2 Prolog: UGC NET CSE | June 2014 | Part 3 | Question: 14 top

Which one of the following describes the syntax of prolog program?

I. Rules and facts are terminated by full stop(.)
II. Rules and facts are terminated by semi colon(;)
III. Variables names must start with upper case alphabets.
IV. Variables names must start with lower case alphabets.

A. I, II
B. III, IV
C. I, III
D. II, IV

ugcnetjune2014iii artificial-intelligence prolog

Answer key

## 16.19 Reinforcement Learning (1) top

### 16.19.1 Reinforcement Learning: UGC NET CSE | June 2019 | Part 2 | Question: 100 top

Reinforcement learning can be formalized in terms of ____ in which the agent initially only knows the set of possible _____ and the set of possible actions.

A. Markov decision processes, objects
B. Hidden states, objects
C. Markov decision processes, states
D. objects, states

ugcnetcse-june2019-paper2 artificial-intelligence reinforcement-learning

Answer key

## 16.20 Searches (1) top

### 16.20.1 Searches: UGC NET CSE | June 2019 | Part 2 | Question: 92 top

Math List-I with List-II:

| | List-I | | List-II |
|---|---|---|---|
| $(a)$ | Greedy best-first | $(i)$ | Minimal cost $(p) + h(p)$ |
| $(b)$ | Lowest cost-first | $(ii)$ | Minimal $h(p)$ |
| $(c)$ | $A^*$ algorithm | $(iii)$ | Minimal cost $(p)$ |

Choose the correct option from those given below:

A. (a) – (i) ; (b) – (ii); (c) – (iii)
B. (a) – (iii) ; (b) – (ii); (c) – (i)
C. (a) – (i) ; (b) – (iii); (c) – (ii)
D. (a) – (ii) ; (b) – (iii); (c) – (i)

ugcnetcse-june2019-paper2 artificial-intelligence searches

Answer key

## 16.21 Sigmoid Function (1) top

### 16.21.1 Sigmoid Function: UGC NET CSE | June 2019 | Part 2 | Question: 99 top

The value of the derivative of Sigmoid function given by $f(x) = \frac{1}{1+e^{-2x}}$ at $x = 0$ is

A. $0$
B. $\frac{1}{2}$
C. $\frac{1}{4}$
D. $\infty$

ugcnetcse-june2019-paper2 artificial-intelligence sigmoid-function

Answer key

## 16.22 Strips (1) top

## 16.22.1 Strips: UGC NET CSE | June 2019 | Part 2 | Question: 93 top

The STRIPS representation is

A. a feature-centric representation
B. an action-centric representation
C. a combination of feature-centric and action-centric representations
D. a hierarchical feature-centric representation

ugcnetcse-june2019-paper2 artificial-intelligence strips

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 16.0.1 | C | 16.0.2 | C | 16.1.1 | C | 16.1.2 | C | 16.1.3 | B |
| 16.1.4 | D | 16.1.5 | B | 16.1.6 | Q-Q | 16.1.7 | Q-Q | 16.1.8 | Q-Q |
| 16.1.9 | A | 16.1.10 | D | 16.1.11 | B | 16.1.12 | B | 16.1.13 | A |
| 16.1.14 | B | 16.1.15 | D | 16.2.1 | D | 16.3.1 | B | 16.4.1 | B |
| 16.5.1 | D | 16.6.1 | A | 16.6.2 | B | 16.7.1 | C | 16.8.1 | C |
| 16.9.1 | C | 16.10.1 | Q-Q | 16.11.1 | B | 16.12.1 | D | 16.12.2 | A |
| 16.12.3 | B | 16.12.4 | A | 16.13.1 | B | 16.14.1 | D | 16.15.1 | B |
| 16.16.1 | D | 16.16.2 | D | 16.16.3 | C | 16.17.1 | Q-Q | 16.18.1 | B |
| 16.18.2 | C | 16.19.1 | C | 16.20.1 | D | 16.21.1 | B | 16.22.1 | B |

# 17 Non GATE: Big Data Systems (1)

## 17.1 Big Data Systems (1) top

### 17.1.1 Big Data Systems: UGC NET CSE | October 2020 | Part 2 | Question: 13 top

The data node and name node in HADOOP are

A. Worker Node and Master Node respectively
B. Master Node and Worker Node respectively
C. Both Worker Nodes
D. Both Master Nodes

ugcnetcse-oct2020-paper2 non-gate big-data-systems

Answer key

# Answer Keys

| | |
|---|---|
| 17.1.1 | A |

# 18 Non GATE: Cloud Computing (2)

## 18.1 Cloud Computing (2) top

### 18.1.1 Cloud Computing: UGC NET CSE | December 2018 | Part 2 | Question: 64 top

Suppose a cloud contains software stack such as Operating systems, Application softwares, etc. This model is referred as ____ model

A. $SaaS$ B. $PaaS$ C. $IaaS$ D. $MaaS$

ugcnetcse-dec2018-paper2 cloud-computing

Answer key

### 18.1.2 Cloud Computing: UGC NET CSE | October 2020 | Part 2 | Question: 58 top

Which of the following cloud concept/s is/are related to pooling and sharing of resources?

a. Virtual Memory b. Service c. Virtualization

Choose the correct answer from the options given below:

A. $(c)$ only B. $(a)$ and $(b)$ only C. $(a)$ only D. $(b)$ only

ugcnetcse-oct2020-paper2 non-gate cloud-computing

Answer key

## Answer Keys

| | | | |
|---|---|---|---|
| 18.1.1 | Q-Q | 18.1.2 | A |

# 19 Non GATE: Computer Graphics (80)

## 19.1 2d Geometry (1) top

### 19.1.1 2d Geometry: UGC NET CSE | July 2018 | Part 2 | Question: 10 top

Consider the matrix $M = \begin{bmatrix} 2 & 0 & 2 \\ 0 & 1 & 1 \\ 0 & 0 & 1 \end{bmatrix}$ representing a set of planar (2D) geometric transformations in homogeneous coordinates. Which of the following statements about the matrix M is **True?**

A. M represents first, a scaling of vector (2, 1) followed by translation of vector (1,1)
B. M represents first, a translation of vector (1, 1) followed by scaling of vector (2,1)
C. M represents first, a scaling of vector (3, 1) followed by shearing of parameters (-1,1)
D. M represents first, a shearing of parameters (-1, 1) followed by scaling of vector (3,1)

ugcnetcse-july2018-paper2 computer-graphics 2d-geometry

Answer key

## 19.2 2d Transformation (1) top

### 19.2.1 2d Transformation: UGC NET CSE | June 2019 | Part 2 | Question: 28 top

Consider the following statements regarding $2D$ transforms in computer graphics:

$S1$ : $\begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$ is a $2 \times 2$ matrix that reflects (mirrors) only $2D$ point about the X-axis.

$S2$ : A $2 \times 2$ matrix which mirrors any $2D$ point about the $X$-axis, is a rotation matrix.

What can you say about the statements $S1$ and $S2$?

A. Both $S1$ and $S2$ are true
B. Only $S1$ is true
C. Only $S2$ is true
D. Both $S1$ and $S2$ are false

ugcnetcse-june2019-paper2 2d-transformation

Answer key

## 19.3 3d Graphics (2) top

### 19.3.1 3d Graphics: UGC NET CSE | July 2018 | Part 2 | Question: 9 top

Which of the following statements is/are **True** regarding the solution of the visibility problem in 3D graphics?

S1: The painter's algorithm sorts polygons by depth and then paints (scan - converts) each Polygon on to the screen starting with the most nearest polygon

S2: Backface Culling refers to eliminating geometry with backfacing normals

A. S1 only
B. S2 only
C. Both S1 and S2
D. Neither S1 nor S2

ugcnetcse-july2018-paper2 computer-graphics 3d-graphics

Answer key

### 19.3.2 3d Graphics: UGC NET CSE | June 2019 | Part 2 | Question: 29 top

In the context of 3D computer graphics, which of the following statements is/are true?

P : Orthographic transformations keep parallel lines parallel.

Q : Orthographic transformations are affine transformations.

Select the correct answer from the options given below:

A. Both P and Q
B. Neither P nor Q
C. Only P
D. Only Q

ugcnetcse-june2019-paper2 3d-graphics

Answer key

## 19.4 3d Rotation (1) top

### 19.4.1 3d Rotation: UGC NET CSE | September 2013 | Part 3 | Question: 64 top

Consider the following transformation matrix for rotation(clockwise):

$$[T] = \begin{bmatrix} \cos\theta & \sin\theta & 0 & 0 \\ -\sin\theta & \cos\theta & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

This matrix rotates an object by an angle $\theta$ about:

A. X-axis
B. Y-axis
C. Z-axis
D. All of the above

ugcnetcse-sep2013-paper3 computer-graphics 3d-rotation

Answer key

## 19.5 Animation (1) top

### 19.5.1 Animation: UGC NET CSE | December 2014 | Part 3 | Question: 13 top

Which of the following categories of languages do not refer to animation languages ?

A. Graphical languages
B. General-purpose languages
C. Linear-list notations
D. None of the above

ugcnetcse-dec2014-paper3 computer-graphics animation non-gate

Answer key

## 19.6 Anti Aliasing (1) top

### 19.6.1 Anti Aliasing: UGC NET CSE | September 2013 | Part 3 | Question: 61 top

Which of the following is/are fundamental method(s) of antialiasing?

I. Increase of sample rate
II. Treating a pixel as a finite area rather than as a point
III. Decrease of sample rate

A. I and II
B. II and III
C. I only
D. II only

ugcnetcse-sep2013-paper3 computer-graphics anti-aliasing

Answer key

## 19.7 Breshenmans Algorithm (1) top

### 19.7.1 Breshenmans Algorithm: UGC NET CSE | June 2016 | Part 3 | Question: 13 top

Consider the Breshenman's circle generation algorithm for plotting a circle with centre (0,0) and radius 'r' unit in first quadrant. If the current point is $(x_i, y_i)$ and decision parameter is $p_i$ then what will be the next point $(x_{i+1}, y_{i+1})$ and updates decision parameter $p_{i+1}$ for $p \geq 0$?

A. $x_{i+1} = x_i + 1; y_{i+1} = y_i; p_{i+1} = p_i + 4x_i + 6$
B. $x_{i+1} = x_i + 1; y_{i+1} = y_i - 1; p_{i+1} = p_i + 4(x_i - y_i) + 10$
C. $x_{i+1} = x_i; y_{i+1} = y_i - 1; p_{i+1} = p_i + 4(x_i - y_i) + 6$
D. $x_{i+1} = x_i - 1; y_{i+1} = y_i; p_{i+1} = p_i + 4x_i + 10$

ugcnetcse-june2016-paper3 computer-graphics breshenmans-algorithm

Answer key

## 19.8 Color Models (1) top

### 19.8.1 Color Models: UGC NET CSE | September 2013 | Part 3 | Question: 62 top

The two color systems – the HSV and HLS are

A. Hue, Saturation, Value and Hue, Lightness, Saturation
B. High, Standard, Value and High Lightness, Saturation
C. Highly, Saturated, Value and Highly, Lightened Saturation
D. Highly, Standard, Value and Hue, Lightness, Saturation

ugcnetcse-sep2013-paper3 computer-graphics color-models

Answer key

## 19.9 Computer Graphics (38) top

### 19.9.1 Computer Graphics: UGC NET CSE | December 2012 | Part 3 | Question: 12 top

Let $V_1 = 2I - J + k$ and $V_2 = I + J - K$, then the angle between $V_1$ and $V_2$ and a vector perpendicular to both $V_1$ and $V_2$ shall be

A. $90^o$ and $(-2I + J - 3K)$
B. $60^o$ and $(2I + J + 3K)$
C. $90^o$ and $(2I + J - 3K)$
D. $90^o$ and $(-2I - J + 3K)$

ugcnetcse-dec2012-paper3 computer-graphics

Answer key

### 19.9.2 Computer Graphics: UGC NET CSE | December 2012 | Part 3 | Question: 33 top

The Z-buffer algorithm is used for Hidden surface removal of objects. The maximum number of objects that can be handled by this algorithm shall

A. depend on the application
B. be arbitrary no. of objects
C. depend on the memory availability
D. depend on the processor

ugcnetcse-dec2012-paper3 computer-graphics

Answer key

### 19.9.3 Computer Graphics: UGC NET CSE | December 2012 | Part 3 | Question: 6 top

The aspect ratio of an image is defined as

A. The ratio of width to its height measured in unit length
B. The ratio of height to width measured in number of pixel
C. The ratio of depth to width measured in unit length
D. The ratio of width to depth measured in number of pixel

ugcnetcse-dec2012-paper3 computer-graphics

Answer key

### 19.9.4 Computer Graphics: UGC NET CSE | December 2013 | Part 3 | Question: 62 top

Which of the following statements is (are) true?

I. Two successive translations are additive
II. Two successive relations are additive
III. Two successive scaling operations are multiplicative

A. I and II
B. I and III
C. II and III
D. All of the above

ugcnetcse-dec2013-paper3 computer-graphics non-gate

Answer key

### 19.9.5 Computer Graphics: UGC NET CSE | December 2013 | Part 3 | Question: 63 top

Given below are three basic rules:

I. Squash and Stretch

II. Slow-in and Slow-out
III. To stage the action properly

These rules are applied in case of

A. Rendering B. Morphing C. Animation D. All of the above

ugcnetcse-dec2013-paper3 computer-graphics non-gate

Answer key

## 19.9.6 Computer Graphics: UGC NET CSE | December 2013 | Part 3 | Question: 64 top

Which of the following points lies on the same side as the origin, with reference to the line 3x+7y=2?

A. (3, 0) B. (1, 0) C. (0.5, 0.5) D. (0.5, 0)

ugcnetcse-dec2013-paper3 computer-graphics non-gate

Answer key

## 19.9.7 Computer Graphics: UGC NET CSE | December 2013 | Part 3 | Question: 65 top

The transformation required for conversion of CMY colour model to RGB colour model is given as:

A. $\begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} C \\ M \\ Y \end{bmatrix} - \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$

B. $\begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} C \\ M \\ Y \end{bmatrix} - \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$

C. $\begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix} - \begin{bmatrix} C \\ M \\ Y \end{bmatrix}$

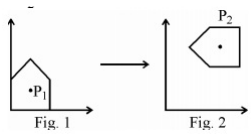
D. $\begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} C \\ M \\ Y \end{bmatrix} - \begin{bmatrix} 0.5 \\ 0.5 \\ 0.5 \end{bmatrix}$

ugcnetcse-dec2013-paper3 computer-graphics non-gate

Answer key

## 19.9.8 Computer Graphics: UGC NET CSE | December 2013 | Part 3 | Question: 66 top

What steps shall be required to rotate an object from point $P_1$ (as shown in fig. 1) and its placement such that what was at $P_1$ is now reduced and is at $P_2$ (as shown in fig. 2)?




I. Translate $P_1$ to origin
II. Scale as required
III. Rotate
IV. Translate to the final position $P_2$

A. I, II and III B. II, III and IV C. I, III and IV D. All of the above

ugcnetcse-dec2013-paper3 computer-graphics non-gate

Answer key

## 19.9.9 Computer Graphics: UGC NET CSE | December 2014 | Part 3 | Question: 15 top

A technique used to approximate halftones without reducing spatial resolution is known as_____.

A. Halftoning
B. Dithering
C. Error diffusion
D. None of the above

ugcnetcse-dec2014-paper3 computer-graphics non-gate

Answer key

## 19.9.10 Computer Graphics: UGC NET CSE | December 2015 | Part 3 | Question: 33 top

Which of the following graphic primitives are considered as the basic building blocks of computer graphics?

a. Points
b. Lines
c. Polylines
d. Polygons

A. a only
B. b and d only
C. a, b and c only
D. a, b, c and d

ugcnetcse-dec2015-paper3 computer-graphics

Answer key

## 19.9.11 Computer Graphics: UGC NET CSE | December 2015 | Part 3 | Question: 50 top

Which of the following is not a lossy compression technique?

A. JPEG
B. MPEG
C. FFT
D. Arithmetic coding

ugcnetcse-dec2015-paper3 computer-graphics

Answer key

## 19.9.12 Computer Graphics: UGC NET CSE | December 2015 | Part 3 | Question: 67 top

Which of the following is/are the principle components of a memory-tube display?

a. Flooding gun
b. Collector
c. Phosphorus grains
d. Ground

A. a only
B. a and b only
C. c and d only
D. All of the above

ugcnetcse-dec2015-paper3 computer-graphics

Answer key

## 19.9.13 Computer Graphics: UGC NET CSE | December 2015 | Part 3 | Question: 69 top

Which raster locations would be chosen by Bresenham's algorithm when scan converting a line from $(1,1)$ to $(8,5)$?

A.

| $x$ | $y$ |
|---|---|
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 3 |
| 5 | 4 |
| 6 | 4 |
| 7 | 5 |
| 8 | 6 |

B.

| $x$ | $y$ |
|---|---|
| 1 | 1 |
| 2 | 2 |
| 3 | 2 |
| 4 | 3 |
| 5 | 4 |
| 6 | 5 |
| 7 | 6 |
| 8 | 7 |

C.

| $x$ | $y$ |
|---|---|
| 1 | 1 |
| 2 | 2 |
| 3 | 2 |
| 4 | 3 |
| 5 | 3 |
| 6 | 4 |
| 7 | 4 |
| 8 | 5 |

D.

| $x$ | $y$ |
|---|---|
| 1 | 1 |
| 2 | 2 |
| 3 | 2 |
| 4 | 3 |
| 5 | 5 |
| 6 | 4 |
| 7 | 5 |
| 8 | 5 |

ugcnetcse-dec2015-paper3 computer-graphics

Answer key

## 19.9.14 Computer Graphics: UGC NET CSE | December 2015 | Part 3 | Question: 70 top

Consider a unit square centered at origin. The coordinates at the square are translated by a factor $\left(\frac{1}{2}, 1\right)$ and rotated by an angle of $90^\circ$. What shall be the coordinates of the new square?

A.
$\left(\frac{-1}{2}, 0\right), \left(\frac{-1}{2}, 1\right), \left(\frac{-3}{2}, 1\right), \left(\frac{-3}{2}, 0\right)$

B.
$\left(\frac{-1}{2}, 0\right), \left(\frac{1}{2}, 1\right), \left(\frac{3}{2}, 1\right), \left(\frac{3}{2}, 0\right)$

C.
$\left(\frac{-1}{2}, 0\right), \left(\frac{1}{2}, 0\right), \left(\frac{-3}{2}, 1\right), \left(\frac{-3}{2}, 0\right)$

D. $\left(\frac{-1}{2},0\right),\left(\frac{1}{2},1\right),\left(\frac{-3}{2},1\right),\left(\frac{-3}{2},0\right)$

ugcnetcse-dec2015-paper3 computer-graphics

Answer key

## 19.9.15 Computer Graphics: UGC NET CSE | January 2017 | Part 3 | Question: 16 top

Below are the few steps given for scan-converting a circle using Bresenham's Algorithm. Which of the given steps is not correct?

A. Compute $d = 3 - 2r$ (where $r$ is radius)
B. Stop if $x > y$
C. If $d < 0$, then $d = 4x + 6$ and $x = x + 1$
D. I f $d \geq 0$, then $d = 4 * (x - y) + 10$, $x = x + 1$ and $y = y + 1$

ugcnetcse-jan2017-paper3 non-gate computer-graphics

Answer key

## 19.9.16 Computer Graphics: UGC NET CSE | January 2017 | Part 3 | Question: 17 top

Which of the following is/are side effects of scan conversion?

a. Aliasing
b. Unequal intensity of diagonal lines
c. Overstriking in photographic applications
d. Local and Global aliasing

A. a and b
B. a,b and c
C. a,c and d
D. a,b,c and d

ugcnetcse-jan2017-paper3 non-gate computer-graphics

Answer key

## 19.9.17 Computer Graphics: UGC NET CSE | January 2017 | Part 3 | Question: 18 top

Consider a line $AB$ with $A = (0,0)$ and $B = (8,4)$. Apply a simple $DDA$ algorithm and compute the first four plots on this line.

A. $[(0,0),(1,1),(2,1),(3,2)]$
B. $[(0,0),(1,1.5),(2,2),(3,3)]$
C. $[(0,0),(1,1),(2,2.5),(3,3)]$
D. $[(0,0),(1,2),(2,2),(3,2)]$

ugcnetcse-jan2017-paper3 non-gate computer-graphics

Answer key

## 19.9.18 Computer Graphics: UGC NET CSE | July 2018 | Part 2 | Question: 8 top

A graphic display system has a frame buffer that is 640 pixels high, 480 pixels high and 1 bit of color depth. If the access time for each pixel on the average is 200 nanoseconds, then the refresh rate of this frame buffer is approximately:

A. 16 frames per second
B. 19 frames per second
C. 21 frames per second
D. 23 frames per second

ugcnetcse-july2018-paper2 computer-graphics

Answer key

## 19.9.19 Computer Graphics: UGC NET CSE | June 2012 | Part 3 | Question: 14 top

If the pixels of an image are shuffled then the parameter that may change is

A. Histogram
B. Mean
C. Entropy
D. Covariance

ugcnetcse-june2012-paper3 computer-graphics

Answer key

## 19.9.20 Computer Graphics: UGC NET CSE | June 2012 | Part 3 | Question: 63 top

If a and b are the end points of a line, then which of the following is true?

A. If both end points are left, right, above or below the window, the line is invisible.
B. If both end points are left, right, above or below the window, the line is completely visible.

C. If both end points are left, right, above or below the window, the line is trivially visible
D. If both end points are left, right, above or below the window, the line is trivially invisible

computer-graphics non-gate ugcnetcse-june2012-paper3

Answer key

## 19.9.21 Computer Graphics: UGC NET CSE | June 2014 | Part 3 | Question: 01 top

Beam-penetration and shadow-mask are the two basic techniques for producing color displays with a CRT. Which of the following is not true ?

I. The beam-penetration is used with random scan monitors.

II. Shadow-mask is used in rasterscan systems.

III. Beam-penetration method is better than shadow-mask method.

IV. Shadow-mask method is better than beam-penetration method.

A. I and II
B. II and III
C. III only
D. IV only

ugcnetjune2014iii non-gate computer-graphics

Answer key

## 19.9.22 Computer Graphics: UGC NET CSE | June 2014 | Part 3 | Question: 02 top

Line caps are used for adjusting the shape of the line ends to give them a better appearance. Various kinds of line caps used are

A. Butt cap and sharp cap
B. Butt cap and round cap
C. Butt cap, sharp cap and round cap
D. Butt cap, round cap and projecting square cap

ugcnetjune2014iii non-gate computer-graphics

Answer key

## 19.9.23 Computer Graphics: UGC NET CSE | June 2014 | Part 3 | Question: 03 top

Given below are certain output primitives and their associated attributes. Match each primitive with its corresponding attributes :

| | List – I | | List – II |
|---|---|---|---|
| a. | Line | i. | Type, Size, Color |
| b. | Fill Area | ii. | Color, Size, Font |
| c. | Text | iii. | Style, Color, Pattern |
| d. | Marker | iv. | Type, Width, Color |

**Codes :**

A. a-i, b-ii, c-iii, d-iv
B. a-ii, b-i, c-iii, d-iv
C. a-iv, b-iii, c-ii, d-i
D. a-iii, b-i, c-iv, d-ii

ugcnetjune2014iii non-gate computer-graphics

Answer key

## 19.9.24 Computer Graphics: UGC NET CSE | June 2014 | Part 3 | Question: 04 top

Consider a window bounded by the lines $: x = 0; y = 0; x = 5$ and $y = 3$. The line segment joining $(-1, 0)$ and $(4, 5)$, if clipped against this window will connect the points

A. $(0,1)$ and $(2,3)$
B. $(0,1)$ and $(3,3)$
C. $(0,1)$ and $(4,3)$
D. $(0,1)$ and $(3,2)$

ugcnetjune2014iii non-gate geometry computer-graphics

Answer key

## 19.9.25 Computer Graphics: UGC NET CSE | June 2014 | Part 3 | Question: 05 top

Which of the following color models are defined with three primary colors ?

A. RGB and HSV color models
B. CMY and HSV color models
C. HSV and HLS color models
D. RGB and CMY color models

ugcnetjune2014iii non-gate computer-graphics

Answer key

## 19.9.26 Computer Graphics: UGC NET CSE | June 2016 | Part 3 | Question: 15 top

Let R be the rectangular window against which the lines are to be clipped using 2D Sutherland-Cohen line clipping algorithm. The rectangular window has lower rectangular corner at (-5, 1) and upper right-hand corner at (3, 7). Consider the following three lines for clipping with the given end-point coordinates?

Line AB:A(-6,2) and B(-1,8)

Line CD: C(-1,5) and D(4,8)

Line EF: E(-2,3) and F(1,2)

Which of the following lines is/are candidate for clipping?

A. AB
B. DC
C. EF
D. AB and CD

ugcnetcse-june2016-paper3 computer-graphics

Answer key

## 19.9.27 Computer Graphics: UGC NET CSE | June 2016 | Part 3 | Question: 17 top

Let us consider that the original point is (x,y) and new transformed point is (x',y'). Further $Sh_x$ and $Sh_y$ are shearing factors in x and y directions. If we perform the y direction shear relative to x=$s_{ref}$ then the transformed point is given by

A. $x' = x + Sh_x.(y - y_{ref}); y' = y$
B. $x' = x; y' = y.Sh_x$
C. $x' = x; y' = Sh_y(x - x_{ref}) + y$
D. $x' = Sh_y.y; y' = y.(x - x_{ref})$

ugcnetcse-june2016-paper3 computer-graphics

Answer key

## 19.9.28 Computer Graphics: UGC NET CSE | June 2016 | Part 3 | Question: 18 top

Which of the following statements is/are correct with reference to curve generation?

I. Hermite curves are generated using the concepts of interpolation
II. Bezier curves are generated using the concepts of approximation
III. The Bezier curve lies entirely within the convex hull of its control points
IV. The degree of Bezier curve does not depend on the number of control points

A. I, II and IV only
B. II and III only
C. I and II only
D. I, II and III only

ugcnetcse-june2016-paper3 computer-graphics

Answer key

## 19.9.29 Computer Graphics: UGC NET CSE | Junet 2015 | Part 3 | Question: 16 top

Which of the following is not a basic primitive of the Graphics Kernel System (GKS)?

A. POLYLINE
B. POLYDRAW
C. FILL AREA
D. POLYMARKER

ugcnetcse-june2015-paper3 computer-graphics

Answer key

## 19.9.30 Computer Graphics: UGC NET CSE | Junet 2015 | Part 3 | Question: 17 top

Which of the following statements is/are incorrect?

a. Mapping the co-ordinates of the points and lines from the world coordinate system to the device coordinates of the display

A. a only
B. b only
C. a and b
D. d only

ugcnetcse-june2015-paper3 computer-graphics

Answer key

## 19.9.31 Computer Graphics: UGC NET CSE | Junet 2015 | Part 3 | Question: 18 top

Match the following :

| | List-I | | List-II |
|---|---|---|---|
| (a) | Flood Gun | (i) | An electron gun designed to flood the entire screen with electrons. |
| (b) | Collector | (ii) | Partly energized by flooding gun, stores the charge generated by the writing gun. |
| (c) | Ground | (iii) | Used to discharge the collector. |
| (d) | Phosphorous Grains | (iv) | Used in memory - tube display and similar to those used in standard CRT. |
| (e) | Writing Gun System | (v) | Used in memory - tube display and basically the same as the electron gun used in a conventional CRT. |

**Codes :**

A. (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv), (e)-(v)
B. (a)-(ii), (b)-(iii), (c)-(i), (d)-(iv), (e)-(v)
C. (a)-(iii), (b)-(i), (c)-(ii), (d)-(v), (e)-(iv)
D. (a)-(iv), (b)-(v), (c)-(i), (d)-(ii), (e)-(iii)

ugcnetcse-june2015-paper3 computer-graphics

Answer key

## 19.9.32 Computer Graphics: UGC NET CSE | November 2017 | Part 3 | Question: 13 top

Which of the following is not a component of Memory tube display?

A. Flooding gun B. Collector C. Ground D. Liquid Crystal

ugcnetcse-nov2017-paper3 computer-graphics

Answer key

## 19.9.33 Computer Graphics: UGC NET CSE | October 2020 | Part 2 | Question: 46 top

In the context of $3D$ Computer graphics, which of the following statements is/are correct?

a. Under perspective projection, a set of parallel lines appear to converge to a vanishing point

b. Applying a perspective transformation to a point in the object space results in a point in the image space

c. Perspective projection preserves the shape of the object

Choose the correct answer from the options given below:

A. $(a)$ and $(b)$ only B. $(a)$ and $(c)$ only C. $(b)$ and $(c)$ only D. $(a)$, $(b)$ and $(c)$

ugcnetcse-oct2020-paper2 non-gate computer-graphics

Answer key

## 19.9.34 Computer Graphics: UGC NET CSE | October 2020 | Part 2 | Question: 47 top

Concerning phong shading and Gouraud shading in a $3D$ scene, which of the following statements are true?

a. Gouraud shading requires more computation than Phong shading

b. Gouraud shading interpolates intensities over the pixel in the scan line

c. Phong shading interpolates normals over the pixel in the scan line

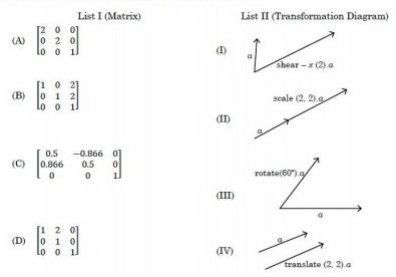
Choose the correct answer from the options given below:

A. $(a)$ and $(b)$ only B. $(a)$ and $(c)$ only C. $(b)$ and $(c)$ only D. $(a), (b)$ and $(c)$

ugcnetcse-oct2020-paper2 non-gate computer-graphics

## 19.9.35 Computer Graphics: UGC NET CSE | October 2020 | Part 2 | Question: 66 top

Match $\text{List I}$ with $\text{List II}$. $\text{List I}$ gives $3 \times 3$ matrices representing $2D$ transformations and $\text{List II}$ shows the corresponding transformation diagrams.




Choose the correct answer from the options given below:

A. $A-IV, B-II, C-III, D-I$
B. $A-IV, B-III, C-II, D-I$
C. $A-III, B-II, C-IV, D-I$
D. $A-II, B-IV, C-III, D-I$

ugcnetcse-oct2020-paper2 non-gate computer-graphics

Answer key

## 19.9.36 Computer Graphics: UGC NET CSE | October 2020 | Part 2 | Question: 76 top

Given below are different properties of $3D$ projections from $A-D$. Identify the correct order on the basis of property true of $(i)$ a perspective projection only, $(ii)$ an orthographic projection only, $(iii)$ both orthographic and projective transformations and $(iv)$ neither orthographic nor projective transformation, respectively.

a. Straight lines are mapped to straight lines
b. Distances and angles are preserved
c. Parallel lines remain parallel
d. Foreshortening of objects appears as they are closer to the image plane

Choose the correct answer from the options given below:

A. d,c,b,a
B. b,c,d,a
C. d,c,a,b
D. c,d,b,a

ugcnetcse-oct2020-paper2 non-gate computer-graphics

Answer key

## 19.9.37 Computer Graphics: UGC NET CSE | October 2020 | Part 2 | Question: 82 top

Given below are two statements:

Statement $I$: Bezier curves are curves that interpolate all of their control points

Statement $II$: A cubic bezier curve has four control points

In the light of the above statements, choose the correct answer from the options given below

A. Both Statement $I$ and Statement $II$ are true
B. Both Statement $I$ and Statement $II$ are false
C. Statement $I$ is correct but Statement $II$ is false
D. Statement $I$ is incorrect but Statement $II$ is true

ugcnetcse-oct2020-paper2 non-gate computer-graphics

Answer key

## 19.9.38 Computer Graphics: UGC NET CSE | September 2013 | Part 3 | Question: 59 top

Which of the following graphics devices are known as active graphics devices?

I. Alphanumeric devices
II. Thumb wheels
III. Digitizers
IV. Joystics

A. I and II
B. III and IV
C. I, II and III
D. I, II, III and IV

ugcnetcse-sep2013-paper3 computer-graphics

Answer key

## 19.10 Crt (2) top

### 19.10.1 Crt: UGC NET CSE | December 2015 | Part 3 | Question: 71 top

Which of the following is/are the components of a CRT ?

a. Electron Gun b. Control Electrode c. Focusing Electrode d. Phosphor Coated Screen

A. a and b only B. a, b, c and d C. b, c and d D. a and d

ugcnetcse-dec2015-paper3 computer-graphics crt

Answer key

### 19.10.2 Crt: UGC NET CSE | November 2017 | Part 3 | Question: 15 top

With respect to CRT, the horizontal retrace is defined as

A. The path an electron beam takes when returning to the left side of the CRT
B. The path an electron beam takes when returning to the right side of the CRT
C. The technique of turning, the electron beam off while retracing
D. The technique of turning, the electron beam on/ off while retracing

ugcnetcse-nov2017-paper3 computer-graphics crt

Answer key

## 19.11 Digital Image Processing (5) top

### 19.11.1 Digital Image Processing: UGC NET CSE | June 2013 | Part 3 | Question: 19 top

An image is 1024∗800 pixels with 3 bytes/pixel. Assume the image is uncompressed. How long does it make to transmit it over a 10 Mbps Ethernet?

A. 196.6 seconds
B. 19.66 seconds
C. 1.966 seconds
D. 0.1966 seconds

ugcnetcse-june2013-paper3 computer-graphics digital-image-processing

Answer key

### 19.11.2 Digital Image Processing: UGC NET CSE | June 2013 | Part 3 | Question: 31 top

Images tend to be very large collection of data. The size of memory required for a 1024 by 1024 image in which the color of each pixel is represented by a n-bit number, (in an 8-bit machines) is

A. n $\times$ 8 MB
B. n/8 MB
C. (1024 $\times$ 1024)/8 MB
D. 1024 MB

ugcnetcse-june2013-paper3 computer-graphics digital-image-processing

Answer key

### 19.11.3 Digital Image Processing: UGC NET CSE | June 2013 | Part 3 | Question: 56 top

The number of distinct binary images which can be generated from a given binary image of right M $\times$ N are

A. M+N
B. M $\times$ N
C. $2^{M+N}$
D. $2^{MN}$

ugcnetcse-june2013-paper3 computer-graphics digital-image-processing

Answer key

### 19.11.4 Digital Image Processing: UGC NET CSE | June 2013 | Part 3 | Question: 57 top

If f(x, y) is a digital image, then x, y and amplitude values of f are

A. Finite
B. Infinite

C. Neither finite nor infinite
D. None of the above

ugcnetcse-june2013-paper3 computer-graphics digital-image-processing

Answer key

### 19.11.5 Digital Image Processing: UGC NET CSE | November 2017 | Part 3 | Question: 18 top

The three aspects of Quantization, programmers generally concerned with are

A. Coding error, Sampling rate and Amplification
B. Sampling rate, Coding error and Conditioning
C. Sampling rate, Aperture time and Coding error
D. Aperture time, Coding error and Strobing

ugcnetcse-nov2017-paper3 computer-graphics digital-image-processing

Answer key

## 19.12 Display Devices (1) top

### 19.12.1 Display Devices: UGC NET CSE | June 2013 | Part 3 | Question: 28 top

The refresh rate above which a picture stops flickering and fuses into a steady image is called ____

A. Crucial fusion frequency
B. Current frequency fusion
C. Critical fusion frequency
D. Critically diffused frequency

ugcnetcse-june2013-paper3 computer-graphics display-devices

Answer key

## 19.13 Frame Buffer (1) top

### 19.13.1 Frame Buffer: UGC NET CSE | August 2016 | Part 3 | Question: 14 top

Consider a $N$-bit plane frame buffer with $W$-bit wide lookup table with $W > N$. How many intensity levels are available at a time ?

A. $2^N$
B. $2^W$
C. $2^{N+W}$
D. $2^{N-1}$

ugcnetcse-aug2016-paper3 computer-graphics frame-buffer

## 19.14 Halftoning (1) top

### 19.14.1 Halftoning: UGC NET CSE | June 2012 | Part 3 | Question: 75 top

Halftoning is defined as

A. A technique to obtain increased visual resolution using multiple intensity levels
B. A technique for using minimum number of intensity levels to obtain increased visual resolution
C. A technique to obtain increased visual resolution using maximum number of intensity levels
D. A technique for using appropriate number intensity levels to obtain increased visual resolution

ugcnetcse-june2012-paper3 computer-graphics halftoning

Answer key

## 19.15 Image Compression (1) top

### 19.15.1 Image Compression: UGC NET CSE | September 2013 | Part 3 | Question: 55 top

MPEG involves both spatial compression and temporal compression. The spatial compression is similar to JPEG and temporal compression removes _____ frames.

A. Temporal
B. Voice
C. Spatial
D. Redundant

ugcnetcse-sep2013-paper3 computer-graphics digital-image-processing image-compression

Answer key

## 19.16 Image Entropy (1) top

### 19.16.1 Image Entropy: UGC NET CSE | December 2012 | Part 3 | Question: 71 top

You are given four images to represent as

$$I_1 = \begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}, I_2 = \begin{bmatrix} 0 & 1 \\ 0 & 0 \end{bmatrix}, I_3 = \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}, I_4 = \begin{bmatrix} 1 & 1 \\ 1 & 0 \end{bmatrix}$$

The value of entropy is maximum for image

A. $I_1$ B. $I_2$ C. $I_3$ D. $I_4$

ugcnetcse-dec2012-paper3 computer-graphics image-entropy

Answer key

## 19.17 Line Clipping (1) top

### 19.17.1 Line Clipping: UGC NET CSE | December 2014 | Part 3 | Question: 17 top

In Cyrus-Beck algorithm for line clipping the value of $t$ parameter is computed by the relation:

(Here $P_1$ and $P_2$ are the two end points of the line, $f$ is a point on the boundary, $n_1$ is inner normal).

A. $\frac{(P_1-f_i).n_i}{(P_2-P_1).n_i}$

B. $\frac{(f_i-P_1).n_i}{(P_2-P_1).n_i}$

C. $\frac{(P_2-f_i).n_i}{(P_1-P_2).n_i}$

D. $\frac{(f_i-P_2).n_i}{(P_1-P_2).n_i}$

ugcnetcse-dec2014-paper3 non-gate computer-graphics line-clipping

Answer key

## 19.18 Line Drawing Algorithm (3) top

### 19.18.1 Line Drawing Algorithm: UGC NET CSE | August 2016 | Part 3 | Question: 15 top

Consider the Breshenham's line generation algorithm for a line with gradient greater than one, current point $(x_i, y_i)$ and decision parameter, $d_i$. The next point to be plotted $(x_{i+1}, y_{i+1})$ and updated decision parameter, $d_{i+1}$, for $d_i < 0$ are given as _____.

A. $x_{i+1} = x_{i+1} y_{i+1} = y_i d_{i+1} = d_i + 2dy$
B. $x_{i+1} = x_i y_{i+1} = y_{i+1} d_{i+1} = d_i + 2dx$
C. $x_{i+1} = x_i y_{i+1} = y_{i+1} d_{i+1} = d_i + 2(dx - dy)$
D. $x_{i+1} = x_{i+1} y_{i+1} = y_{i+1} d_{i+1} = d_i + 2(dy - dx)$

ugcnetcse-aug2016-paper3 computer-graphics line-drawing-algorithm

Answer key

### 19.18.2 Line Drawing Algorithm: UGC NET CSE | August 2016 | Part 3 | Question: 18 top

The Liang-Barsky line clipping algorithm uses the parametric equation of a line from $(x_1, y_1)$ to $(x_2, y_2)$ along with its infinite extension which is given as :

$$x = x_1 + \Delta x . u$$

$$y = y_1 + \Delta y . u$$

Where $\Delta x = x_2 - x_1, \Delta y = y_2 - y_1$, and $u$ is the parameter with $0 \le u \le 1$. A line $AB$ with end points $A(-1, 7)$ and $B(11, 1)$ is to be clipped against a rectangular window with $x_{min} = 1, x_{max} = 9, y_{min} = 2$, and $y_{max} = 8$. The lower and upper bound values of the parameter u for the clipped line using Liang-Barsky algorithm is given as :

A. $(0, \frac{2}{3})$ B. $(\frac{1}{6}, \frac{5}{6})$ C. $(0, \frac{1}{3})$ D. $(0, 1)$

ugcnetcse-aug2016-paper3 computer-graphics line-drawing-algorithm

Answer key

### 19.18.3 Line Drawing Algorithm: UGC NET CSE | June 2013 | Part 3 | Question: 27 top

Bresenham line drawing algorithm is attractive because it uses

A. Real arithmetic only
B. Integer arithmetic only
C. Floating point arithmetic
D. Real and integer arithmetic

ugcnetcse-june2013-paper3 computer-graphics line-drawing-algorithm

Answer key

## 19.19 Parametric Line Equation (1) top

### 19.19.1 Parametric Line Equation: UGC NET CSE | September 2013 | Part 3 | Question: 63 top

The parametric representation of the line segment between the position vectors $P_1(2,3)$ and $P_2(5,4)$ is given as

A. $x(t) = 2 + 7t, y(t) = 0 \leq t \leq \infty \quad 3 + 7t$
B. $x(t) = 2 + 10t, y(t) = 0 \leq t \leq 1 \quad 3 + 7t$
C. $x(t) = 2 + 3t, y(t) = 0 \leq t \leq 1 \quad y(t) = 3 + t$
D. $t(x, y) = 14t \quad 0 \leq t \leq 1$

ugcnetcse-sep2013-paper3 computer-graphics parametric-line-equation

Answer key

## 19.20 Phong Color Model (1) top

### 19.20.1 Phong Color Model: UGC NET CSE | June 2019 | Part 2 | Question: 30 top

Using the phong reflectance model, the strength of the specular highlight is determined by the angle between

A. the view vector and the normal vector
B. the light vector and the normal vector
C. the light vector and the reflected vector
D. the reflected vector and the view vector

ugcnetcse-june2019-paper2 phong-color-model

Answer key

## 19.21 Projection (8) top

### 19.21.1 Projection: UGC NET CSE | August 2016 | Part 3 | Question: 16 top

A point $P(2,5)$ is rotated about a pivot point $(1,2)$ by 60°. What is the new transformed point $P'$ ?

A. $(1,4)$
B. $(-1,4)$
C. $(1,-4)$
D. $(-4,1)$

ugcnetcse-aug2016-paper3 computer-graphics projection

Answer key

### 19.21.2 Projection: UGC NET CSE | August 2016 | Part 3 | Question: 17 top

In perspective projection (from 3D to 2D), objects behind the centre of projection are projected upside down and backward onto the view-plane. This is known as _____.

A. Topological distortion
B. Vanishing point
C. View confusion
D. Perspective foreshortening

ugcnetcse-aug2016-paper3 computer-graphics projection

Answer key

### 19.21.3 Projection: UGC NET CSE | December 2014 | Part 3 | Question: 18 top

Match the following :

| | List – I | | List – II |
|---|---|---|---|
| a. | Cavalier Projection | i. | The direction of projection is chosen so that there is no foreshortening of lines perpendicular to the $xy$ plane. |
| b. | Cabinet Projection | ii. | The direction of projection is chosen so that lines perpendicular to the $xy$ planes are foreshortened by half their lengths. |
| c. | Isometric Projection | iii. | The direction of projection makes equal angles with all of the principal axis. |
| d. | Orthographic Projection | iv. | Projections are characterized by the fact that the direction of projection is perpendicular to the view plane. |

**Codes :**

A. a-i, b-iii, c-iv, d-ii
B. a-ii, b-iii, c-i, d-iv
C. a-iv, b-ii, c-iii, d-i
D. a-i, b-ii, c-iii, d-iv

ugcnetcse-dec2014-paper3 computer-graphics projection non-gate

Answer key

## 19.21.4 Projection: UGC NET CSE | June 2012 | Part 3 | Question: 59 top

The perspective projection matrix, on the view plan z=d where the centre of projection is the origin (0, 0, 0) shall be

A. $\begin{bmatrix} 0 & 0 & 0 & d \\ 0 & 0 & d & 0 \\ 0 & d & 0 & 0 \\ d & 0 & 0 & 1 \end{bmatrix}$

B. $\begin{bmatrix} d & 0 & 0 & 0 \\ 0 & d & 0 & 0 \\ 0 & 0 & d & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}$

C. $\begin{bmatrix} 0 & 0 & 0 & d \\ 0 & 0 & d & 0 \\ 0 & d & 0 & 0 \\ 1 & 0 & 0 & 0 \end{bmatrix}$

D. $\begin{bmatrix} d & 0 & 0 & 0 \\ 0 & d & 0 & 0 \\ 0 & 0 & d & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$

ugcnetcse-june2012-paper3 computer-graphics projection

Answer key

## 19.21.5 Projection: UGC NET CSE | June 2013 | Part 3 | Question: 29 top

In homogenous coordinate system (x, y, z) the points z=0 are called

A. Cartesian points
B. Parallel points
C. Origin point
D. Point of infinity

ugcnetcse-june2013-paper3 computer-graphics projection

Answer key

### 19.21.6 Projection: UGC NET CSE | June 2016 | Part 3 | Question: 16 top

In perspective projection, if a line segment joining a point which lies in front of the viewer to a point in back of the viewer is projected to a broken line of infinte extent. This is known as ____

A. View confusion
B. Vanishing point
C. Topological distortion
D. Perspective foreshortening

ugcnetcse-june2016-paper3 computer-graphics projection

Answer key

### 19.21.7 Projection: UGC NET CSE | November 2017 | Part 3 | Question: 14 top

Which of the following is **not** true in case of Oblique Projections?

A. Parallel projection rays are not perpendicular to the viewing plane
B. Parallel lines in space appear parallel on the final projected image
C. Used exclusively for pictorial purposes rather than formal working drawings
D. Projectors are always perpendicular to the plane of projection

ugcnetcse-nov2017-paper3 computer-graphics projection

Answer key

### 19.21.8 Projection: UGC NET CSE | September 2013 | Part 3 | Question: 60 top

A diametric projection is said to be trimetric projection when

I. two of the three foreshortening factors are equal and third is arbitrary
II. all of the three foreshortening factors are equal
III. all of the three foreshortening factors are arbitrary

Which of the above is true?

A. I and II
B. II and III
C. I only
D. III only

ugcnetcse-sep2013-paper3 computer-graphics projection

Answer key

## 19.22 Raster Graphics (2) top

### 19.22.1 Raster Graphics: UGC NET CSE | August 2016 | Part 3 | Question: 13 top

Consider a raster grid having $XY$-axes in positive $X$-direction and positive upward $Y$-direction with $X_{max} = 10$, $X_{min} = -5$, $Y_{max} = 11$, and $Y_{min} = 6$. What is the address of memory pixel with location $(5, 4)$ in raster grid assuming base address $1$ (one) ?

A. $150$
B. $151$
C. $160$
D. $161$

ugcnetcse-aug2016-paper3 computer-graphics raster-graphics

Answer key

### 19.22.2 Raster Graphics: UGC NET CSE | June 2019 | Part 2 | Question: 27 top

Consider a raster system with resolution $640$ by $480$. What size is frame buffer (in bytes) for this system to store $12$ bits per pixel?

A. $450$ kilobytes
B. $500$ kilobytes
C. $350$ kilobytes
D. $400$ kilobytes

ugcnetcse-june2019-paper2 raster-graphics

Answer key

## 19.23 Resolution (1) top

### 19.23.1 Resolution: UGC NET CSE | June 2013 | Part 3 | Question: 30 top

If 40 black lines interleaved with 40 white lines can be distinguished across one inch, the resolution is

A. 40 line-pairs per inch
B. 80 line-pairs per inch
C. 1600 lines per inch
D. 40 lines per inch

ugcnetcse-june2013-paper3 computer-graphics resolution

Answer key

## 19.24 Rotation (2) top

### 19.24.1 Rotation: UGC NET CSE | June 2016 | Part 3 | Question: 14 top

A point P(5,1) is rotated by $90^o$ about a pivot point (2,2). What is the coordinate of new transformed point P'?

A. (3,5)
B. (5,3)
C. (2,4)
D. (1,5)

ugcnetcse-june2016-paper3 computer-graphics rotation

Answer key

### 19.24.2 Rotation: UGC NET CSE | Junet 2015 | Part 3 | Question: 14 top

Consider a triangle A(0,0), B(1, 1) and C(5, 2). The triangle has to be rotated by an angle of $45^o$ about the point P(-1, -1). What shall be the coordinates of new triangle?

A. $A' = (1, \sqrt{2}-1), B'(-1, 2\sqrt{2}-1)$ and $C' = \left(3\sqrt{2}-1, \frac{9}{2}\sqrt{2}-1\right)$
B. $A' = (1, \sqrt{2}-1), B'(2\sqrt{2}-1, -1)$ and $C' = \left(3\sqrt{2}-1, \frac{9}{2}\sqrt{2}-1\right)$
C. $A' = (-1, \sqrt{2}-1), B'(-1, 2\sqrt{2}-1)$ and $C' = \left(3\sqrt{2}-1, \frac{9}{2}\sqrt{2}-1\right)$
D. $A' = (\sqrt{2}-1, -1) B'(-1, 2\sqrt{2}-1)$ and $C' = \left(3\sqrt{2}-1, \frac{9}{2}\sqrt{2}-1\right)$

ugcnetcse-june2015-paper3 computer-graphics rotation

Answer key

## 19.25 Transformation (2) top

### 19.25.1 Transformation: UGC NET CSE | December 2012 | Part 3 | Question: 16 top

The Mandelbrot set used for the construction of beautiful images is based on the following transformation. $x_{n+1} = x_n^2 + z$. Here,

A. Both $x$ and $z$ are real numbers
B. Both $x$ and $z$ are complex numbers
C. $x$ is real and $z$ is complex
D. $x$ is complex and $z$ is real

ugcnetcse-dec2012-paper3 computer-graphics transformation

Answer key

### 19.25.2 Transformation: UGC NET CSE | Junet 2015 | Part 3 | Question: 13 top

Give the number of principal vanishing point(s) along with their direction for the standard prospective transformation:

A. Only one in the direction K
B. Two in the directions i and j
C. Three in the directions I, J and K
D. Only two in the directions J and K

ugcnetcse-june2015-paper3 computer-graphics transformation

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 19.1.1 | Q-Q | 19.2.1 | B | 19.3.1 | Q-Q | 19.3.2 | A | 19.4.1 | C |
| 19.5.1 | D | 19.6.1 | A | 19.7.1 | B | 19.8.1 | A | 19.9.1 | X |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 19.9.2 | B | 19.9.3 | A | 19.9.4 | D | 19.9.5 | C | 19.9.6 | D |
| 19.9.7 | C | 19.9.8 | X | 19.9.9 | B | 19.9.10 | D | 19.9.11 | X |
| 19.9.12 | B | 19.9.13 | C | 19.9.14 | D | 19.9.15 | D | 19.9.16 | D |
| 19.9.17 | A | 19.9.18 | Q-Q | 19.9.19 | D | 19.9.20 | D | 19.9.21 | C |
| 19.9.22 | D | 19.9.23 | C | 19.9.24 | A | 19.9.25 | D | 19.9.26 | D |
| 19.9.27 | C | 19.9.28 | D | 19.9.29 | B | 19.9.30 | D | 19.9.31 | A |
| 19.9.32 | D | 19.9.33 | A | 19.9.34 | C | 19.9.35 | D | 19.9.36 | C |
| 19.9.37 | D | 19.9.38 | D | 19.10.1 | C | 19.10.2 | A | 19.11.1 | C |
| 19.11.2 | B | 19.11.3 | D | 19.11.4 | A | 19.11.5 | C | 19.12.1 | C |
| 19.13.1 | Q-Q | 19.14.1 | B | 19.15.1 | D | 19.16.1 | C | 19.17.1 | B |
| 19.18.1 | Q-Q | 19.18.2 | Q-Q | 19.18.3 | B | 19.19.1 | C | 19.20.1 | D |
| 19.21.1 | Q-Q | 19.21.2 | Q-Q | 19.21.3 | D | 19.21.4 | B | 19.21.5 | D |
| 19.21.6 | C | 19.21.7 | D | 19.21.8 | C | 19.22.1 | Q-Q | 19.22.2 | A |
| 19.23.1 | A | 19.24.1 | A | 19.24.2 | C | 19.25.1 | B | 19.25.2 | A |

# 20 Non GATE: Computer Peripherals (3)

## 20.1 Computer Peripherals (1) top

### 20.1.1 Computer Peripherals: UGC NET CSE | December 2013 | Part 3 | Question: 61 top

Which of the following is not true with respect to to a trackball and/or spaceball?

I. A trackball is a two dimensional positioning device while as a spaceball provides six degrees of freedom
II. Unlike the trackball a spaceball does not actually move
III. A trackball is a three dimensional positioning device while as a spaceball provides six degrees of freedom

A. I and II
B. II and III
C. II only
D. III only

ugcnetcse-dec2013-paper3 non-gate computer-peripherals

Answer key

## 20.2 Io Devices (1) top

### 20.2.1 Io Devices: UGC NET CSE | December 2014 | Part 3 | Question: 14 top

Match the following :

| | List – I | | List – II |
|---|---|---|---|
| a. | Tablet, Joystick | i. | Continuous devices |
| b. | Light pen, Touch screen | ii. | Direct devices |
| c. | Locator, keyboard | iii. | Logical devices |
| d. | Data Globe, Sonic pen | iv. | 3D interaction devices |

**Codes :**

A. a-ii, b-i, c-iv, d-iii
B. a-i, b-iv, c-iii, d-ii
C. a-i, b-ii, c-iii, d-iv
D. a-iv, b-iii, c-ii, d-i

ugcnetcse-dec2014-paper3 non-gate computer-peripherals io-devices

Answer key

## 20.3 Matrix Printer (1) top

### 20.3.1 Matrix Printer: UGC NET CSE | December 2014 | Part 3 | Question: 03 top

In a dot matrix printer the time to print a character is $6$ m.sec., time to space in between characters is $2$ m.sec., and the number of characters in a line are $200$. The printing speed of the dot matrix printer in characters per second and the time to print a character line are given by which of the following options ?

A. $125$ chars/second and $0.8$ seconds
B. $250$ chars/second and $0.6$ seconds
C. $166$ chars/second and $0.8$ seconds
D. $250$ chars/second and $0.4$ seconds

ugcnetcse-dec2014-paper3 computer-peripherals non-gate matrix-printer io-devices

Answer key

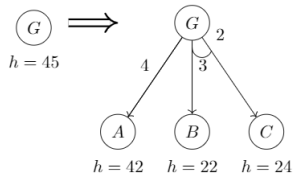
# Answer Keys

| | | | | | |
|---|---|---|---|---|---|
| 20.1.1 | D | 20.2.1 | C | 20.3.1 | X |

# 21 Non GATE: Data Mining and Warehousing (17)

## 21.0.1 UGC NET CSE | January 2017 | Part 3 | Question: 56 top

Consider the following AO graph:




Which is the best node to expand by next AO* algorithm?

A. A
B. B
C. C
D. B and C

ugcnetcse-jan2017-paper3 non-gate

Answer key

## 21.0.2 UGC NET CSE | December 2004 | Part 2 | Question: 49 top

A data warehouse is always _____.

A. Subject oriented
B. Object oriented
C. Program oriented
D. Compiler oriented

ugcnetcse-dec2004-paper2

Answer key

# 21.1 Data Cube (1) top

## 21.1.1 Data Cube: UGC NET CSE | December 2015 | Part 2 | Question: 31 top

A data cube $C$, has $n$ dimensions, and each dimensions has exactly $p$ distinct values in the base cuboid. Assume that there are no concept hierarchies associated with the dimensions. What is the maximum number of cells possible in the data cube, $C$?

A. $p^n$
B. $p$
C. $(2^n - 1)(p + 1)$
D. $(p + 1)^n$

ugcnetcse-dec2015-paper2 data-cube data-modelling

Answer key

# 21.2 Data Mining (1) top

## 21.2.1 Data Mining: UGC NET CSE | October 2020 | Part 2 | Question: 35 top

The process of removing details from a given state representation is called _____

A. Extraction
B. Mining
C. Selection
D. Abstraction

ugcnetcse-oct2020-paper2 non-gate data-mining

Answer key

# 21.3 Data Mining And Warehousing (1) top

## 21.3.1 Data Mining And Warehousing: UGC NET CSE | December 2015 | Part 2 | Question: 34 top

____ allows selection of the relevant information necessary for the data warehouse:

A. The Top-Down View
B. Data Warehouse View
C. Datasource View
D. Business Query View

ugcnetcse-dec2015-paper2 data-warehousing data-mining-and-warehousing

Answer key

# 21.4 Decision Tree (1) top

### 21.4.1 Decision Tree: UGC NET CSE | September 2013 | Part 2 | Question: 40 top

The decision tree classifier is a widely used technique for

A. Classification B. Association C. Partition D. Clustering

ugcnetsep2013ii machine-learning decision-tree

Answer key

## 21.5 Expert System (1) top

### 21.5.1 Expert System: UGC NET CSE | December 2014 | Part 3 | Question: 59 top

Match the following components of an expert system :

| | List – I | | List – II |
|---|---|---|---|
| a. | I/O Interface | i. | Accepts user's queries and responds to question through I/O interface |
| b. | Explanation Module | ii. | Contains facts and rules about the domain |
| c. | Inference Engine | iii. | Gives the user, the ability to follow inferencing steps at any time during consultation |
| d. | Knowledge Base | iv. | Permits the user to communicate with the system in a natural way |

**Codes :**

A. a-i, b-iii, c-iv, d-ii
B. a-iv, b-iii, c-i, d-ii
C. a-i, b-iii, c-ii, d-iv
D. a-iv, b-i, c-iii, d-ii

ugcnetcse-dec2014-paper3 artificial-intelligence expert-system

Answer key

## 21.6 Fuzzy Set (1) top

### 21.6.1 Fuzzy Set: UGC NET CSE | June 2012 | Part 3 | Question: 6 top

If two fuzzy set $A$ and $B$ are given with membership functions

$\mu_A(x) = \{0.2, 0.4, 0.8, 0.5, 0.1\}$

$\mu_B(x) = \{0.1, 0.3, 0.6, 0.3, 0.2\}$

Then the value of $\mu_{\overline{A \cap B}}$ will be

A. $\{0.9, 0.7, 0.4, 0.8, 0.9\}$
B. $\{0.2, 0.4, 0.8, 0.5, 0.2\}$
C. $\{0.1, 0.3, 0.6, 0.3, 0.1\}$
D. $\{0.7, 0.3, 0.4, 0.2, 0.7\}$

ugcnetcse-june2012-paper3 fuzzy-set

Answer key

## 21.7 Group Decision Support System (1) top

### 21.7.1 Group Decision Support System: UGC NET CSE | August 2016 | Part 3 | Question: 73 top

Criticism free idea generation is a factor of _____.

A. Decision Support System
B. Group Decision Support System
C. Enterprise Resource Support System
D. Artificial Intelligence

ugcnetcse-aug2016-paper3 artificial-intelligence group-decision-support-system

Answer key

## 21.8 K Means Clustering (1) top

### 21.8.1 K Means Clustering: UGC NET CSE | October 2020 | Part 2 | Question: 83 top

Given below are two statements:

If two variables $V_1$ and $V_2$ are used for clustering, then consider the following statements for $k$ means clustering with $k = 3$:

- Statement I: If $V_1$ and $V_2$ have correlation of $1$ the cluster centroid will be in straight line
- Statement II: If $V_1$ and $V_2$ have correlation of $0$ the cluster centroid will be in straight line

In the light of the above statements, choose the correct answer from the options given below

A. Both Statement I and Statement II are true
B. Both Statement I and Statement II are false
C. Statement I is correct but Statement II is false
D. Statement I is incorrect but Statement II is true

ugcnetcse-oct2020-paper2 k-means-clustering

Answer key

## 21.9 Knowledge Representation (5) top

### 21.9.1 Knowledge Representation: UGC NET CSE | December 2013 | Part 3 | Question: 23 top

High level knowledge which relates to the use of sentences in different contexts and how the context affect the meaning of the sentences?

A. Morphological B. Syntactic C. Semantic D. Pragmatic

ugcnetcse-dec2013-paper3 artificial-intelligence knowledge-representation

Answer key

### 21.9.2 Knowledge Representation: UGC NET CSE | December 2014 | Part 3 | Question: 58 top

Match the following :

| | List – I | | List – II |
|---|---|---|---|
| a. | Script | i. | Directed graph with labelled nodes for graphical representation of knowledge |
| b. | Conceptual Dependencies | ii. | Knowledge about objects and events is stored in record-like structures consisting of slots and slot values. |
| c. | Frames | iii. | Primitive concepts and rules to represent natural language statements |
| d. | Associative Network | iv. | Frame like structures used to represent stereotypical patterns for commonly occurring events in terms of actors, roles, props and scenes. |

**Codes :**

A. a-iv, b-ii, c-i, d-iii
B. a-iv, b-iii, c-ii, d-i
C. a-ii, b-iii, c-iv, d-i
D. a-i, b-iii, c-iv, d-ii

ugcnetcse-dec2014-paper3 artificial-intelligence knowledge-representation

### 21.9.3 Knowledge Representation: UGC NET CSE | June 2010 | Part 2 | Question: 2 top

'$R$ is a robot of $M$' means $R$ can perform some of the tasks that otherwise $M$ would do and $R$ is unable to do anything else.Which of the following is the most appropriate representation to model this situation?

A.
B.
C.
D. None of these

ugcnetcse-june2010-paper2 knowledge-representation non-gate

### 21.9.4 Knowledge Representation: UGC NET CSE | June 2013 | Part 3 | Question: 72 top

Which of the following is a knowledge representation technique used to represent knowledge about stereotype situation?

A. Semantic network B. Frames C. Scripts D. Conceptual Dependency

ugcnetcse-june2013-paper3 artificial-intelligence knowledge-representation

Answer key

### 21.9.5 Knowledge Representation: UGC NET CSE | June 2014 | Part 3 | Question: 08 top

Consider a fuzzy set old as defined below

Old $=\{(20,0.1),(30,0.2),(40,0.4),(50,0.6),(60,0.8),(70,1),(80,1)\}$.

Then the alpha-cut for alpha = $0.4$ for the set old will be

A. $\{(40,0.4)\}$
B. $\{50,60,70,80\}$
C. $\{(20,0.1),(30,0.2)\}$
D. $\{(20,0),(30,0),(40,1),(50,1),(60,1),(70,1),(80,1)\}$

ugcnetjune2014iii knowledge-representation fuzzy-set

Answer key

## 21.10 Olap (1) top

### 21.10.1 Olap: UGC NET CSE | December 2015 | Part 2 | Question: 33 top

____ system is market oriented and is used for data analysis by knowledge workers including Managers, Executives adn Analysts.

A. OLTP B. OLAP C. Data System D. Market System

ugcnetcse-dec2015-paper2 data-warehousing olap data-mining-and-warehousing

Answer key

## 21.11 Perceptron (1) top

### 21.11.1 Perceptron: UGC NET CSE | December 2014 | Part 3 | Question: 70 top

Consider the following statements about a perception :

$I$. Feature detector can be any function of the input parameters.

$II$. Learning procedure only adjusts the connection weights to the output layer. Identify the correct statement out of the following :

A. $I$ is false and $II$ is false.
B. $I$ is true and $II$ is false.
C. $I$ is false and $II$ is true.
D. $I$ is true and $II$ is true.

ugcnetcse-dec2014-paper3 neural-network perceptron

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 21.0.1 | A | 21.0.2 | Q-Q | 21.1.1 | D | 21.2.1 | D | 21.3.1 | A |
| 21.4.1 | A | 21.5.1 | B | 21.6.1 | X | 21.7.1 | Q-Q | 21.8.1 | C |
| 21.9.1 | D | 21.9.2 | B | 21.9.3 | Q-Q | 21.9.4 | C | 21.9.5 | D |
| 21.10.1 | B | 21.11.1 | D | | | | | | |

# 22 Non GATE: Digital Image Processing (8)

## 22.1 Discovolution (1) top

### 22.1.1 Discovolution: UGC NET CSE | December 2015 | Part 3 | Question: 51 top

Blind image disconvolution is

A. Combination of blur identification and image restoration
B. Combination of segmentation and classification
C. Combination of blur and non-blur image
D. None of the above

ugcnetcse-dec2015-paper3 digital-image-processing discovolution

Answer key

## 22.2 Entropy (2) top

### 22.2.1 Entropy: UGC NET CSE | December 2014 | Part 3 | Question: 65 top

Given a simple image of size $10 \times 10$ whose histogram models the symbol probabilities and is given by

| $P_1$ | $P_2$ | $P_3$ | $P_4$ |
|---|---|---|---|
| a | b | c | d |

The first order estimate of image entropy is maximum when

A. $a=0, b=0, c=0, d=1$
B. $a=\frac{1}{2}, b=\frac{1}{2}, c=0, d=0$
C. $a=\frac{1}{3}, b=\frac{1}{3}, c=\frac{1}{3}, d=0$
D. $a=\frac{1}{4}, b=\frac{1}{4}, c=\frac{1}{4}, d=\frac{1}{4}$

ugcnetcse-dec2014-paper3 digital-image-processing entropy

Answer key

### 22.2.2 Entropy: UGC NET CSE | December 2015 | Part 3 | Question: 49 top

Consider the conditional entropy and mutual information for the binary symmetric channel. The input source has alphabet $X = \{0, 1\}$ and associated probabilities $\frac{1}{2}, \frac{1}{2}$. The channel matrix is $\begin{pmatrix} 1-p & p \\ p & 1-p \end{pmatrix}$ wgere p is the transition probability. Then the conditional entropy is given by:

A. $1$
B. $-p\log(p) - (1-p)\log(1-p)$
C. $1 + p\log(p) + (1-p)\log(1-p)$
D. $0$

ugcnetcse-dec2015-paper3 digital-image-processing entropy

Answer key

## 22.3 Fourier Transform (1) top

### 22.3.1 Fourier Transform: UGC NET CSE | December 2012 | Part 3 | Question: 64 top

If the Fourier transform of the function f(x,y) is F(m,n), then the Fourier transform of the function f(2x,2y) is

A. $\frac{1}{4}F(\frac{m}{2}, \frac{n}{2})$
B. $\frac{1}{4}F(2m, 2n)$
C. $\frac{1}{4}F(m, n)$
D. $\frac{1}{4}F(\frac{m}{4}, \frac{n}{4})$

ugcnetcse-dec2012-paper3 fourier-transform digital-image-processing

## 22.4 Image Compression (4) top

### 22.4.1 Image Compression: UGC NET CSE | June 2012 | Part 3 | Question: 10 top

In an image compression system 16384 bits are used to represent 256 $\times$ 256 image with 256 gray levels. What is the compression ratio for this system?

A. 1
B. 2
C. 4
D. 8

ugcnetcse-june2012-paper3 image-compression

Answer key

### 22.4.2 Image Compression: UGC NET CSE | June 2012 | Part 3 | Question: 19 top

The quantiser in an image-compression system is a

A. lossy element which exploits the psychovisual redundancy
B. lossless element which exploits the psychovisual redundancy
C. lossy element which exploits the statistical redundancy
D. lossless element which exploits the statistical redundancy

ugcnetcse-june2012-paper3 image-compression

Answer key

### 22.4.3 Image Compression: UGC NET CSE | June 2014 | Part 3 | Question: 55 top

Given an image of size $1024 \times 1024$ pixels in which intensity of each pixel is an $8$-bit quality. It requires _____ of storage space if the image is not compressed.

A. One Terabyte
B. One Megabyte
C. $8$ Megabytes
D. $8$ Terabytes

ugcnetjune2014iii image-compression computer-graphics

Answer key

### 22.4.4 Image Compression: UGC NET CSE | June 2016 | Part 3 | Question: 60 top

Which of the following is used for the boundary representation of an image object?

A. Quad Tree
B. Projections
C. Run length coding
D. Chain codes

ugcnetcse-june2016-paper3 image-compression computer-graphics

Answer key

## Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 22.1.1 | D | 22.2.1 | D | 22.2.2 | D | 22.3.1 | A | 22.4.1 | X |
| 22.4.2 | A | 22.4.3 | B | 22.4.4 | D | | | | |

# 23 Non GATE: Digital Signal Processing (5)

## 23.0.1 UGC NET CSE | December 2012 | Part 3 | Question: 60 top

The transform which posses 'multi-resolution' property is

A. Fourier transform
B. Short-time Fourier transform
C. Wavelet transform
D. Karhunen-Loere transform

ugcnetcse-dec2012-paper3

Answer key

## 23.1 Butterworth Lowpass Filter (1) top

## 23.1.1 Butterworth Lowpass Filter: UGC NET CSE | December 2014 | Part 3 | Question: 66 top

A Butterworth lowpass filter of order $n$, with a cutoff frequency at distance $D_0$ from the origin, has the transfer function $H(u,v)$ given by

A. $\frac{1}{1+\left[\frac{D(u,v)}{D_0}\right]^{2n}}$
B. $\frac{1}{1+\left[\frac{D(u,v)}{D_0}\right]^{n}}$
C. $\frac{1}{1+\left[\frac{D_0}{D(u,v)}\right]^{2n}}$
D. $\frac{1}{1+\left[\frac{D_0}{D(u,v)}\right]^{n}}$

ugcnetcse-dec2014-paper3 digital-image-processing butterworth-lowpass-filter

Answer key

## 23.2 Digital Signal Processing (1) top

## 23.2.1 Digital Signal Processing: UGC NET CSE | June 2012 | Part 2 | Question: 18 top

Page Shift Keying (PSK) Method is used to modulate digital signal at 9600 bps using 16 level. Find the line signals and speed (i.e., modulation rate)

A. 2400 bauds
B. 1200 bauds
C. 4800 bauds
D. 9600 bauds

ugcnetcse-june2012-paper2 non-gate digital-signal-processing

Answer key

## 23.3 Discrete Memoryless Channel (1) top

## 23.3.1 Discrete Memoryless Channel: UGC NET CSE | June 2016 | Part 3 | Question: 58 top

Consider a discrete memoryless channel and assume that H(x) is the amount of information per symbol at the input of the channel; H(y) is the amount of information per symbol at the output of the channel. H(x | y) is the amount of uncertainty remaining on x knowing y; and I(x;y)is the information transmission. Which of the following does not define the channel capacity of a descrete memoryless channel?

A. max I(x;y); p(x)
B. max [H(y)-H(y | x)]; p(x)
C. max [H(x)-H(x | y)]; p(x)
D. max H(x |y); p(x)

ugcnetcse-june2016-paper3 digital-image-processing discrete-memoryless-channel

Answer key

## 23.4 Spatial Mask (1) top

## 23.4.1 Spatial Mask: UGC NET CSE | December 2014 | Part 3 | Question: 64 top

Given two spatial masks

$$S_1 = \begin{bmatrix} 0 & 1 & 0 \\ 1 & -4 & 0 \\ 0 & 1 & 0 \end{bmatrix}$$

$$S_2 = \begin{bmatrix} 1 & 1 & 1 \\ 1 & -8 & 1 \\ 1 & 1 & 1 \end{bmatrix}$$

The Laplacian of an image at all points $(x, y)$ can be implemented by convolving the image with spatial mask. Which of the following can be used as the spatial mask ?

A. only $S_1$
B. only $S_2$
C. Both $S_1$ and $S_2$
D. None of these

ugcnetcse-dec2014-paper3 digital-image-processing spatial-mask

Answer key

## Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 23.0.1 | C | 23.1.1 | A | 23.2.1 | A | 23.3.1 | D | 23.4.1 | B |

# 24 Non GATE: Distributed Computing (11)

## 24.1 Computing Models (1) top

### 24.1.1 Computing Models: UGC NET CSE | December 2014 | Part 3 | Question: 75 top

Which of the following computing models is not an example of distributed computing environment ?

A. Cloud computing
B. Parallel computing
C. Cluster computing
D. Peer-to-peer computing

ugcnetcse-dec2014-paper3 distributed-computing computing-models

Answer key

## 24.2 Distributed Computing (3) top

### 24.2.1 Distributed Computing: UGC NET CSE | December 2014 | Part 3 | Question: 11 top

Consider the following statements :

I. Re-construction operation used in mixed fragmentation satisfies commutative rule.

II. Re-construction operation used in vertical fragmentation satisfies commutative rule Which of the following is correct ?

A. $I$
B. $II$
C. Both are correct
D. None of the statements are correct.

ugcnetcse-dec2014-paper3 distributed-computing non-gate

Answer key

### 24.2.2 Distributed Computing: UGC NET CSE | December 2014 | Part 3 | Question: 54 top

In a distributed computing environment, distributed shared memory is used which is

A. Logical combination of virtual memories on the nodes.
B. Logical combination of physical memories on the nodes.
C. Logical combination of the secondary memories on all the nodes.
D. All of the above

ugcnetcse-dec2014-paper3 distributed-computing

Answer key

### 24.2.3 Distributed Computing: UGC NET CSE | June 2014 | Part 2 | Question: 27 top

Object Request Broker (ORB) is

I. A software program that runs on the client as well as on the application server.

II. A software program that runs on the client side only.

III. A software program that runs on the application server, where most of the components reside.

A. $I$, $II$ & $III$
B. $I$ & $II$
C. $II$ & $III$
D. $I$ only

ugcnetcse-june2014-paper2 non-gate distributed-computing

Answer key

## 24.3 Distributed Database (2) top

### 24.3.1 Distributed Database: UGC NET CSE | December 2014 | Part 3 | Question: 07 top

Location transparency allows:

I. Users to treat the data as if it is done at one location.

II. Programmers to treat the data as if it is at one location.

III. Managers to treat the data as if it is at one location.

Which one of the following is correct ?

A. $I, II$ and $III$ B. $I$ and $II$ only C. $II$ and $III$ only D. $II$ only

ugcnetcse-dec2014-paper3 distributed-database non-gate

Answer key

### 24.3.2 Distributed Database: UGC NET CSE | June 2016 | Part 3 | Question: 12 top

Semi-join strategies are techniques for query processing in distributed database system. Which of the following is semi-joined technique?

A. Only the joining attributes are sent from one site to another and then all of the rows are returned
B. All of the attributes are sent from one site to another and then only the required rows are returned
C. Only the joining attributes are sent from one site to another and then only the required rows are returned
D. All of the attributes are sent from one site to another and then only the required rows are returned

ugcnetcse-june2016-paper3 non-gate distributed-computing distributed-database

Answer key

## 24.4 Distributed System (2) top

### 24.4.1 Distributed System: UGC NET CSE | December 2015 | Part 3 | Question: 62 top

The distributed system is a collection of _____(P)_____ and communication is achieved in disributed system by ____(Q)____, where (P) and (Q) are:

A. Loosely coupled hardware on tightly coupled software and disk sharing, repspectively
B. Tightly coupled hardware on loosely coupled software and shared memory, repspectively
C. Tightly coupled software on loosely coupled hardware and message passing, repspectively
D. Loosely coupled software on tightly coupled hardware and file sharing, repspectively

ugcnetcse-dec2015-paper3 distributed-system

Answer key

### 24.4.2 Distributed System: UGC NET CSE | September 2013 | Part 3 | Question: 68 top

Which of the following statements is not correct with respect to the distributed systems?

A. Distributed system represents a global view of the network and considers it as a virtual uniprocessor system by controlling and managing resources across the network on all the sites.
B. Distributed system is built on bare machine, not an add-on to the existing software
C. In a distributed system, kernel provides smallest possible set of services on which other services are built. This kernel is called microkernel. Open servers provide other services and access to shared resources.
D. In a distributed system, if a user wants to run the program on other nodes or share the resources on remote sites due to their beneficial aspects, user has to log on to that site.

ugcnetcse-sep2013-paper3 distributed-system

Answer key

## 24.5 Message Passing (1) top

### 24.5.1 Message Passing: UGC NET CSE | Junet 2015 | Part 2 | Question: 50 top

Which of the following is not valid with reference to Message Passing Interface(MPI)?

A. MPI can run on any hardware platform
B. The programming model is a distributed memory model
C. All parallelism is implicit
D. MPI- Comm - Size returns the total number of MPI processes in specified communication

ugcnetcse-june2015-paper2 parallel-computing message-passing

Answer key

## 24.6 Parallel Virtual Machine (1) top

### 24.6.1 Parallel Virtual Machine: UGC NET CSE | Junet 2015 | Part 2 | Question: 47 top

Which of the following statements is incorrect for Parallel Virtual Machine (PVM)?

A. The PVM communication model provides asynchronous blocking send, asynchronous blocking receive, amd non-blocking receive function
B. Message buffers are allocated dynamically
C. The PVM communication model assumes that any task can send a message to any order PVM task and that there is no limit to the size or number of such messages
D. In PVM model, the message order is not preserved

ugcnetcse-june2015-paper2 distributed-computing parallel-virtual-machine

Answer key

## 24.7 Rpc (1) top

### 24.7.1 Rpc: UGC NET CSE | June 2016 | Part 3 | Question: 54 top

Suppose that the time to do a null remote procedure call (RPC) (i.e., 0 data bytes) is 1.0 msec with an additional 1.5 msec for every 1K of data. How long does it take to read 32 K from the file server as 32 1K RPCs?

A. 49 msec B. 80 msec C. 48 msec D. 100 msec

ugcnetcse-june2016-paper3 distributed-computing rpc

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 24.1.1 | B | 24.2.1 | D | 24.2.2 | B | 24.2.3 | D | 24.3.1 | A |
| 24.3.2 | C | 24.4.1 | B | 24.4.2 | D | 24.5.1 | C | 24.6.1 | D |
| 24.7.1 | B | | | | | | | | |

# 25 Non GATE: Geometry (2)

## 25.1 Geometry (1) top

### 25.1.1 Geometry: UGC NET CSE | December 2014 | Part 3 | Question: 16 top

Consider a triangle represented by $A(0,0), B(1,1), C(5,2)$. The triangle is rotated by $45$ degrees about a point $P(-1,-1)$. The co ordinates of the new triangle obtained after rotation shall be _____.

A. $A'(-1,\sqrt{2}-1), B'(-1,2\sqrt{2}-1), C'\left(\frac{3}{2}\sqrt{2}-1,\frac{9}{2}\sqrt{2}-1\right)$
B. $A'(\sqrt{2}-1,-1), B'(2\sqrt{2}-1,-1), C'\left(\frac{3}{2}\sqrt{2}-1,\frac{9}{2}\sqrt{2}-1\right)$
C. $A'(-1,\sqrt{2}-1), B'(2\sqrt{2}-1,-1), C'\left(\frac{3}{2}\sqrt{2}-1,\frac{9}{2}\sqrt{2}-1\right)$
D. $A'(-1,\sqrt{2}-1), B'(2\sqrt{2}-1,-1), C'\left(\frac{9}{2}\sqrt{2}-1,\frac{3}{2}\sqrt{2}-1\right)$

ugcnetcse-dec2014-paper3 geometry non-gate

Answer key

## 25.2 Lines Curves (1) top

### 25.2.1 Lines Curves: UGC NET CSE | December 2015 | Part 3 | Question: 32 top

The end points of a given line are $(0,0)$ and $(6,18)$. Compute each value of y as x steps from $0$ to $3$, by using equation of straight line:

A. For $x=0, y=0; x=1, y=3; x=2, y=6; x=3, y=9$
B. For $x=0, y=1; x=1, y=3; x=2, y=4; x=3, y=9$
C. For $x=0, y=2; x=1, y=3; x=2, y=6; x=3, y=9$
D. For $x=0, y=0; x=1, y=3; x=2, y=4; x=3, y=6$

ugcnetcse-dec2015-paper3 geometry lines-curves

Answer key

# Answer Keys

| | | | | |
|---|---|---|---|---|
| 25.1.1 | A | | 25.2.1 | C |

# 26 Non GATE: Integrated Circuits (1)

## 26.1 Integrated Circuits (1) top

### 26.1.1 Integrated Circuits: UGC NET CSE | June 2012 | Part 2 | Question: 36 top

Which of the following logic families is well suited for high-speed operations?

A. TTL B. ECL C. MOS D. CMOS

non-gate integrated-circuits ugcnetcse-june2012-paper2

Answer key

## Answer Keys

| | |
|---|---|
| 26.1.1 | B |

### 27.0.1 UGC NET CSE | December 2006 | Part 2 | Question: 41 top

Software Cost Performance index (CPI) is given by :

A. $\frac{BCWP}{ACWP}$ B. C. BCWP-ACWP D. BCWP-BCWS

Where :
BCWP stands for Bud
BCWS stands for Bud
ACWP stands for Actu

41. Software Cost Performance index (CPI) is given by :
(A) $\frac{\text{BCWP}}{\text{ACWP}}$ (B)
(C) BCWP – ACWP (D) BCWP – BCWS
Where : BCWP stands for Budgeted Cost of Work Performed
BCWS stands for Budget Cost of Work Scheduled
ACWP stands for Actual Cost of Work Performed

ugcnetcse-dec2006-paper2

Answer key

### 27.0.2 UGC NET CSE | December 2004 | Part 2 | Question: 45 top

The Function Point $(FP)$ metric is :

A. Calculated from user requirements
B. Calculated from Lines of code
C. Calculated from software's complexity assessment
D. None of the above

ugcnetcse-dec2004-paper2

Answer key

### 27.0.3 UGC NET CSE | December 2018 | Part 2 | Question: 57 top

A legacy software system has $940$ modules. The latest release required that $90$ of these modules be changed. In addition, $40$ new modules were added and $12$ old modules were removed. Compute the software maturity index for the system.

A. $0.849$ B. $0.524$ C. $0.725$ D. $0.923$

ugcnetcse-dec2018-paper2

Answer key

### 27.0.4 UGC NET CSE | December 2004 | Part 2 | Question: 42 top

Three essential components of a software project plan are :

A. Team structure, Quality assurance plans, Cost estimation
B. Cost estimation, Time estimation, Quality assurance plan
C. Cost estimation, Time estimation, Personnel estimation
D. Cost estimation, Personnel estimation, Team structure

ugcnetcse-dec2004-paper2

Answer key

### 27.0.5 UGC NET CSE | December 2006 | Part 2 | Question: 45 top

'Abstraction' is _____ step of Attribute in a software design.

A. First B. Final C. Last D. Middle

45. 'Abstraction' is _____ step of Attribute in a software design.
(A) First (B) Final (C) Last (D) Middle

ugcnetcse-dec2006-paper2

Answer key

## 27.0.6 UGC NET CSE | December 2004 | Part 2 | Question: 41 top

The main objective of designing various modules of a software system is :

A. To decrease the cohesion and to increase the coupling
B. To increase the cohesion and to decrease the coupling
C. To increase the coupling only
D. To increase the cohesion only

ugcnetcse-dec2004-paper2

Answer key

## 27.0.7 UGC NET CSE | December 2007 | Part 2 | Question: 41 top

A major defect in water fall model in software development is that :

A. the documentation is difficult
B. a blunder at any stage can be disastrous
C. a trial version is available only at the end of the project
D. the maintenance of the software is difficult

ugcnetcse-dec2007-paper2

Answer key

## 27.0.8 UGC NET CSE | December 2007 | Part 2 | Question: 44 top

System development cost estimation with use-cases is problematic because :

A. of paucity of examples
B. the data can be totally incorrect
C. the expertise and resource available are not used
D. the problem is being over simplified

ugcnetcse-dec2007-paper2

Answer key

## 27.0.9 UGC NET CSE | June 2008 | Part 2 | Question: 42 top

**In software development, value adjustment factors include the following among others:**
**(A) the criticality of the performance and reusability of the code.**
**(B) number of lines of code in the software.**
**(C) number of technical manpower and hardware costs.**
**(D) time period available and the level of user friendliness.**

ugcnetcse-june2008-paper2

Answer key

## 27.0.10 UGC NET CSE | June 2009 | Part 2 | Question: 43 top

Reverse engineering is the process which deals with :

A. Size measurement
B. Cost measurement
C. Design recovery
D. All of the above

ugcnetcse-june2009-paper2

## 27.0.11 UGC NET CSE | December 2007 | Part 2 | Question: 45 top

The approach to software testing is to design test cases to :

A. break the software
B. understand the software
C. analyse the design of sub processes in the software
D. analyze the output of the software

ugcnetcse-dec2007-paper2

Answer key

## 27.0.12 UGC NET CSE | June 2009 | Part 2 | Question: 40 top

In the light of software engineering software consists of :

A. Programs
B. Data
C. Documentation
D. All of the above

ugcnetcse-june2009-paper2

Answer key

## 27.0.13 UGC NET CSE | June 2009 | Part 2 | Question: 42 top

Which of the following is used for test data generation ?

A. White box
B. Black box
C. Boundary-value analysis
D. All of the above

ugcnetcse-june2009-paper2

Answer key

## 27.0.14 UGC NET CSE | December 2006 | Part 2 | Question: 42 top

Software Risk estimation involves following two tasks :

A. risk magnitude and risk impact.
B. risk probability and risk impact.
C. risk maintenance and risk impact.
D. risk development and risk impact.

42. Software Risk estimation involves following two tasks :
(A) risk magnitude and risk impact
(B) risk probability and risk impact
(C) risk maintenance and risk impact
(D) risk development and risk impact

ugcnetcse-dec2006-paper2

Answer key

## 27.0.15 UGC NET CSE | December 2006 | Part 2 | Question: 43 top

In a object oriented software design, 'Inheritance' is a kind of _____ .

A. relationship.
B. module.
C. testing.
D. optimization.

43. In a object oriented software design, 'Inheritance' is a kind of _____ .
(A) relationship
(B) module
(C) testing
(D) optimization

ugcnetcse-dec2006-paper2

Answer key

## 27.0.16 UGC NET CSE | December 2006 | Part 2 | Question: 44 top

Reliability of software is directly dependent on :

A. quality of the design.
B. number of errors present.
C. software engineer's experience.
D. user requirement.

44. Reliability of software is directly dependent on :
(A) quality of the design
(B) number of errors present
(C) software engineer's experience
(D) user requirement

ugcnetcse-dec2006-paper2

Answer key

## 27.0.17 UGC NET CSE | June 2009 | Part 2 | Question: 39 top

Capability Maturity Model is meant for :

A. Product
B. Process
C. Product and Process
D. None of the above

ugcnetcse-june2009-paper2

## 27.0.18 UGC NET CSE | December 2007 | Part 2 | Question: 42 top

Function point metric of a software also depends on the :

A. number of function needed
B. number of final users of the software
C. number of external inputs and outputs
D. time required for one set of output from a set of input data

ugcnetcse-dec2007-paper2

Answer key

## 27.0.19 UGC NET CSE | December 2006 | Part 2 | Question: 30 top

The LAPB frame structure and the frame structure of SDLC are :

A. Opposite
B. Identical
C. Reversed
D. Non-identical

ugcnetcse-dec2006-paper2

## 27.0.20 UGC NET CSE | December 2006 | Part 2 | Question: 19 top

Which of the following tools is not required during system analysis phase of system development life cycle ?

A. Case tool
B. RAD tool
C. Reverse engineering
D. None of these

ugcnetcse-dec2006-paper2

Answer key

## 27.0.21 UGC NET CSE | December 2006 | Part 2 | Question: 16 top

Which possibility among the following is invalid in case of a Data Flow Diagram ?

A. A process having in-bound data flows more than out-bound data flows
B. A data flow between two processes
C. A data flow between two data stores
D. A data store having more than one in-bound data flows

ugcnetcse-dec2006-paper2

Answer key

### 27.0.22 UGC NET CSE | December 2004 | Part 2 | Question: 43 top

Reliability of software is dependent on :

A. Number of errors present in software
B. Documentation
C. Testing suites
D. Development Processes

ugcnetcse-dec2004-paper2

Answer key

## 27.1 Adaptive Maintenance (1) top

### 27.1.1 Adaptive Maintenance: UGC NET CSE | June 2019 | Part 2 | Question: 58 top

Software products need adaptive maintenance for which of the following reasons?

A. To rectify bugs observed while the system is in use
B. When the customers need the product to run on new platform
C. To support the new features that users want it to support
D. To overcome wear and tear caused by the repeated use of the software

ugcnetcse-june2019-paper2 adaptive-maintenance

Answer key

## 27.2 Artificial Intelligence (2) top

### 27.2.1 Artificial Intelligence: UGC NET CSE | December 2012 | Part 3 | Question: 74 top

A* algorithm is guaranteed to find an optimal solution if

A. h' is always 0
B. g is always 1
C. h' never overestimates h
D. h' never underestimates h

ugcnetcse-dec2012-paper3 artificial-intelligence

Answer key

### 27.2.2 Artificial Intelligence: UGC NET CSE | June 2012 | Part 3 | Question: 23 top

Which of the following prolog programs correctly implement "if G succeeds then execute goal P else execute goal $\theta$"?

A. if-else (G, P, $\theta$):-!,call(G), call(P). if-else (G,P, $\theta$) :- call($\theta$).
B. if-else (G, P, $\theta$):-call(G), !, call(P). if-else (G,P, $\theta$) :- call($\theta$).
C. if-else (G, P, $\theta$):-call(G), call(P), !. if-else (G,P, $\theta$) :- call($\theta$).
D. All of the above

ugcnetcse-june2012-paper3 artificial-intelligence

Answer key

## 27.3 Assignment Problem (1) top

### 27.3.1 Assignment Problem: UGC NET CSE | June 2012 | Part 3 | Question: 62 top

The optimal solution of the following assignment problem using Hungarian method is

| | I | II | III | IV |
|---|---|---|---|---|
| A | 8 | 26 | 17 | 11 |
| B | 13 | 28 | 4 | 26 |
| C | 38 | 19 | 18 | 15 |
| D | 19 | 26 | 24 | 10 |

A. (A)-(I), (B)-(II), (C)-(III), (D)-(IV)
B. (A)-(I), (B)-(III), (C)-(II), (D)-(IV)
C. (A)-(I), (B)-(III), (C)-(IV), (D)-(II)
D. (A)-(I), (B)-(IV), (C)-(II), (D)-(III)

ugcnetcse-june2012-paper3 optimization assignment-problem

Answer key

## 27.4 Cmm Model (3) top

### 27.4.1 Cmm Model: UGC NET CSE | December 2014 | Part 2 | Question: 42 top

Requirement Development, Organizational Process Focus, Organizational Training, Risk Management and Integrated Supplier Management are process areas required to achieve maturity level

A. Performed
B. Managed
C. Defined
D. Optimized

ugcnetcse-dec2014-paper2 is&software-engineering cmm-model

Answer key

### 27.4.2 Cmm Model: UGC NET CSE | June 2014 | Part 3 | Question: 21 top

Which one of the following is not a key process area in CMM level 5 ?

A. Defect prevention
B. Process change management
C. Software product engineering
D. Technology change management

ugcnetjune2014iii is&software-engineering cmm-model

Answer key

### 27.4.3 Cmm Model: UGC NET CSE | June 2016 | Part 3 | Question: 47 top

Which of the following sets represent five stages defined by Capability Maturity Model (CMM) in increasing order of maturity?

A. Initial, Defined, Repeatable, Managed, Optimized
B. Initial, Repeatable, Defined, Managed, Optimized
C. Initial, Defined, Managed, Repeatable, Optimized
D. Initial, Repeatable, Managed, Defined, Optimized

ugcnetcse-june2016-paper3 is&software-engineering cmm-model

Answer key

## 27.5 Cmmi (1) top

### 27.5.1 Cmmi: UGC NET CSE | July 2018 | Part 2 | Question: 15 top

Match the 5 CMM Maturity levels/CMMI staged representations in **List-I** with their characterizations in **List-II** :

| | **List-I** | | **List-II** |
|---|---|---|---|
| (a) | Initial | (i) | Processes are improved quantitatively and continually. |
| (b) | Repeatable | (ii) | The plan for a project comes from a template for plans. |
| (c) | Defined | (iii) | The plan uses processes that can be measured quantitatively. |
| (d) | Managed | (iv) | There may not exist a plan or it may be abandoned. |
| (e) | Optimizing | (v) | There's a plan and people stick to it. |

**Code :**

A. (a)-(iv); (b)-(v); (c)-(i); (d)-(iii); (e)-(ii)

B. (a)-(i); (b)-(ii); (c)-(iv); (d)-(v); (e)-(iii)
C. (a)-(v); (b)-(iv); (c)-(ii); (d)-(iii); (e)-(i)
D. (a)-(iv); (b)-(v); (c)-(ii); (d)-(iii); (e)-(i)

ugcnetcse-july2018-paper2 is&software-engineering cmmi software-development-life-cycle-models

Answer key

## 27.6 Cocomo Model (3) top

### 27.6.1 Cocomo Model: UGC NET CSE | December 2008 | Part 2 | Question: 45 top

$COCOMO$ model is used for:

A. product quality estimation
B. product complexity estimation
C. product cost estimation
D. all of the above

ugcnetcse-dec2008-paper2 is&software-engineering cocomo-model

Answer key

### 27.6.2 Cocomo Model: UGC NET CSE | December 2010 | Part 2 | Question: 44 top

The COCOMO model was introduced in the book title “Software Engineering Economics” authored by

A. Abraham Silberschatz
B. Barry Boehm
C. C.J. Date
D. D.E. Knuth

ugcnetcse-dec2010-paper2 is&software-engineering cocomo-model

Answer key

### 27.6.3 Cocomo Model: UGC NET CSE | January 2017 | Part 3 | Question: 48 top

A software company needs to develop a project that is estimated as $1000$ function points and is planning to use JAVA as the programming language whose approximate lines of code per function point is accepted as $50$. Considering $a = 1.4$ as multiplicative factor, $b = 1.0$ as exponention factor for the basic COCOMO effort equation and $c = 3.0$ as multiplicative factor, $d = 0.33$ as exponention factor for the basic COCOMO duration equation, approximately how long does project take to complete?

A. $11.2$ months
B. $12.2$ months
C. $13.2$ months
D. $10.2$ months

ugcnetcse-jan2017-paper3 is&software-engineering cocomo-model

Answer key

## 27.7 Coding And Testing (1) top

### 27.7.1 Coding And Testing: UGC NET CSE | June 2016 | Part 3 | Question: 46 top

Software safety is quality assurance activity that focuses on hazards that

A. affects the reliability of a software component
B. may cause an entire system to fail
C. may result from user input errors
D. prevent profitable marketing of the final product

ugcnetcse-june2016-paper3 is&software-engineering coding-and-testing

Answer key

## 27.8 Cohesion (2) top

### 27.8.1 Cohesion: UGC NET CSE | December 2014 | Part 3 | Question: 48 top

Temporal cohesion means

A. Coincidental cohesion
B. Cohesion between temporary variables
C. Cohesion between local variables
D. Cohesion with respect to time

ugcnetcse-dec2014-paper3 is&software-engineering cohesion

Answer key

### 27.8.2 Cohesion: UGC NET CSE | Junet 2015 | Part 2 | Question: 44 top

Cohesion is an extension of:

A. Abstraction concept
B. Refinment concept
C. Information hiding concept
D. Modularity

ugcnetcse-june2015-paper2 is&software-engineering cohesion

Answer key

## 27.9 Cost Estimation Model (2) top

### 27.9.1 Cost Estimation Model: UGC NET CSE | December 2009 | Part 2 | Question: 43 top

Recorded software attributes can be used in the following endeavours :
(i) Cost and schedule estimates.
(ii) Software product reliability predictions.
(iii) Managing the development process.
(iv) No where

Codes :
(A) (i) (ii) (iv)
(B) (ii) (iii) (iv)
(C) (i) (ii) (iii)
(D) (i) (ii) (iii) (iv)

ugcnetcse-dec2009-paper2 is&software-engineering cost-estimation-model

Answer key

### 27.9.2 Cost Estimation Model: UGC NET CSE | December 2013 | Part 3 | Question: 5 top

Function points can be calculated by

A. UFP * CAF
B. UFP * FAC
C. UFP * Cost
D. UFP * Productivity

ugcnetcse-dec2013-paper3 is&software-engineering cost-estimation-model

Answer key

## 27.10 Coupling (3) top

### 27.10.1 Coupling: UGC NET CSE | December 2013 | Part 3 | Question: 6 top

Match the following :

| | List – I | | List – II |
|---|---|---|---|
| a. | Data Coupling | i. | Module A and Module B have shared data |
| b. | Stamp Coupling | ii. | Dependency between modules is based on the fact they communicate by only passing of data. |
| c. | Common Coupling | iii. | When complete data structure is passed from one module to another |
| d. | Content Coupling | iv. | When the control is passed from one module to the middle of another |

**Codes :**

A. a-iii, b-ii, c-i, d-iv
B. a-ii, b-iii, c-i, d-iv
C. a-ii, b-iii, c-iv, d-i
D. a-iii, b-ii, c-iv, d-i

ugcnetcse-dec2013-paper3 is&software-engineering coupling

Answer key

### 27.10.2 Coupling: UGC NET CSE | July 2018 | Part 2 | Question: 16 top

Coupling is a measure of the strength of the interconnections between software modules. Which of the following are correct statements with respect to module coupling?

P: Common coupling occurs when one module controls the flow of another module by passing it information on what to do

Q: In data coupling, the complete data structure is passed from one module to another through parameters.

R: Stamp coupling occurs when modules share a composite data structure and use only parts of it.

**Code:**

A. P and Q only
B. P and R only
C. Q and R only
D. All of P, Q and R

ugcnetcse-july2018-paper2 is&software-engineering coupling

Answer key

### 27.10.3 Coupling: UGC NET CSE | September 2013 | Part 3 | Question: 46 top

In _____, modules A and B make use of a common data type, but perhaps perform different operations on it.

A. Data coupling
B. Stamp coupling
C. Control coupling
D. Content coupling

ugcnetcse-sep2013-paper3 is&software-engineering coupling

Answer key

## 27.11 Coupling Cohesion (1) top

### 27.11.1 Coupling Cohesion: UGC NET CSE | June 2019 | Part 2 | Question: 51 top

Which of the following statements is/are true?

P: In software engineering, defects that are discovered earlier are more expensive to fix.

Q: A software design is said to be a good design, if the components are strongly cohesive and weakly coupled.

Select the correct answer from the options given below:

A. P only
B. Q only
C. P and Q
D. Neither P nor Q

ugcnetcse-june2019-paper2 coupling-cohesion defect

Answer key

## 27.12 Crc Polynomial (1) top

### 27.12.1 Crc Polynomial: UGC NET CSE | December 2015 | Part 3 | Question: 31 top

In CRC based design, a CRC Team consists of

a. one or two users representatives
b. several programmers
c. project co-ordinators
d. one or two system analysts

A. a and b
B. a, b, c and d
C. b, c, d and a
D. a, b, c and d

ugcnetcse-dec2015-paper3 is&software-engineering crc-polynomial

Answer key

## 27.13 Cyclomatic Complexity (2) top

### 27.13.1 Cyclomatic Complexity: UGC NET CSE | December 2014 | Part 2 | Question: 45 top

Which one of the following is used to compute cyclomatic complexity ?

A. The number of regions $-1$
B. $E-N+1$, where $E$ is the number of flow graph edges and $N$ is the number of flow graph nodes.
C. $P-1$, where $P$ is the number of predicate nodes in the flow graph $G$.
D. $P+1$, where $P$ is the number of predicate nodes in the flow graph $G$.

ugcnetcse-dec2014-paper2 is&software-engineering cyclomatic-complexity

Answer key

### 27.13.2 Cyclomatic Complexity: UGC NET CSE | June 2016 | Part 2 | Question: 44 top

The cyclomatic complexity of a flow graph V(G), in terms of predicate notes is

A. P+1 B. P-1 C. P-2 D. P+2

Where P is the number of predicate nodes in flow graph V(G)

ugcnetcse-june2016-paper2 cyclomatic-complexity

Answer key

## 27.14 Data Mining (2) top

### 27.14.1 Data Mining: UGC NET CSE | December 2012 | Part 3 | Question: 5 top

_____ is process of extracting previously non known valid and actionable information from large data to make crucial business and strategic decisions.

A. Data Management B. Data base C. Data Mining D. Meta Data

ugcnetcse-dec2012-paper3 data-mining

Answer key

### 27.14.2 Data Mining: UGC NET CSE | June 2012 | Part 3 | Question: 12 top

Which of the following can be used for clustering the data?

A. Single layer perception
B. Multilayer perception
C. Self organizing map
D. Radial basis function

ugcnetcse-june2012-paper3 data-mining

Answer key

## 27.15 Digital Marketing (1) top

### 27.15.1 Digital Marketing: UGC NET CSE | December 2012 | Part 3 | Question: 1 top

Eco system is a framework for

A. Building a Computer System
B. Building Internet Market
C. Building Offline Market
D. Building Market

ugcnetcse-dec2012-paper3 e-technologies digital-marketing

Answer key

## 27.16 Fan In (1) top

### 27.16.1 Fan In: UGC NET CSE | December 2014 | Part 3 | Question: 47 top

$'FANIN'$ of a component $A$ is defined as

A. Count of the number of components that can call, or pass control, to a component $A$
B. Number of components related to component $A$
C. Number of components dependent on component $A$
D. None of the above

ugcnetcse-dec2014-paper3 is&software-engineering fan-in

Answer key

## 27.17 Flow Chart (1) top

### 27.17.1 Flow Chart: UGC NET CSE | December 2010 | Part 2 | Question: 45 top

The Warnier diagram enables analyst

A. To represent information hierarchy in a compact manner
B. To further identify requirement
C. To estimate the total cost involved
D. None of the above

ugcnetcse-dec2010-paper2 is&software-engineering flow-chart

Answer key

## 27.18 Function Point Metric (2) top

### 27.18.1 Function Point Metric: UGC NET CSE | December 2014 | Part 3 | Question: 44 top

To compute function points $(FP)$, the following relationship is used $FP$ = Count - total $\times(0.65+0.01\times\sum(F_i))$ where $F_i(i=1$ to $n)$ are value adjustment factors $(VAF)$ based on $n$ questions. The value of $n$ is

A. $12$
B. $14$
C. $16$
D. $18$

ugcnetcse-dec2014-paper3 is&software-engineering function-point-metric

Answer key

### 27.18.2 Function Point Metric: UGC NET CSE | June 2014 | Part 2 | Question: 14 top

In function point analysis, the number of complexity adjustment factors is

A. $10$
B. $12$
C. $14$
D. $20$

ugcnetcse-june2014-paper2 is&software-engineering function-point-metric

Answer key

## 27.19 Git (1) top

### 27.19.1 Git: UGC NET CSE | June 2019 | Part 2 | Question: 55 top

Which of the following terms best describes Git?

A. Issue Tracking System
B. Integrated Development Environment
C. Distributed Version Control System
D. Web-based Repository Hosting Service

ugcnetcse-june2019-paper2 git

Answer key

## 27.20 Information System (1) top

### 27.20.1 Information System: UGC NET CSE | December 2014 | Part 3 | Question: 60 top

A computer based information system is needed :

I. As it is difficult for administrative staff to process data.

II. Due to rapid growth of information and communication technology.

III. Due to growing size of organizations which need to process large volume of data.

IV. As timely and accurate decisions are to be taken.

Which of the above statement(s) is/are true ?

A. $I$ and $II
B. $III$ and $IV$
C. $II$ and $III$
D. $II$ and $IV$

ugcnetcse-dec2014-paper3 information-system

Answer key

## 27.21 Is&software Engineering (59) top

### 27.21.1 Is&software Engineering: UGC NET CSE | August 2016 | Part 3 | Question: 47 top

Which of the following are external qualities of a software product ?

A. Maintainability, reusability, portability, efficiency, correctness.
B. Correctness, reliability, robustness, efficiency, usability.
C. Portability, interoperability, maintainability, reusability.
D. Robustness, efficiency, reliability, maintainability, reusability.

ugcnetcse-aug2016-paper3 is&software-engineering

Answer key

### 27.21.2 Is&software Engineering: UGC NET CSE | August 2016 | Part 3 | Question: 48 top

Which of the following is/are CORRECT statement(s) about version and release ?

I. A version is an instance of a system, which is functionally identical but nonfunctionally distinct from other instances of a system.

II. A version is an instance of a system, which is functionally distinct in some way from other system instances.

III. A release is an instance of a system, which is distributed to users outside of the development team.

IV. A release is an instance of a system, which is functionally identical but nonfunctionally distinct from other instances of a system.

A. I and III B. II and IV C. I and IV D. II and III

ugcnetcse-aug2016-paper3 is&software-engineering

Answer key

### 27.21.3 Is&software Engineering: UGC NET CSE | December 2011 | Part 2 | Question: 14 top

An SRS

A. Establishes the basis for agreement between client and the supplier.
B. Provides a reference for validation of the final product.
C. Is a prerequisite to high quality software.
D. All of the above.

ugcnetcse-dec2011-paper2 is&software-engineering

Answer key

### 27.21.4 Is&software Engineering: UGC NET CSE | December 2011 | Part 2 | Question: 17 top

Design recovery from source code is done during

A. reverse engineering
B. re-engineering
C. reuse
D. all of the above

ugcnetcse-dec2011-paper2 is&software-engineering

Answer key

### 27.21.5 Is&software Engineering: UGC NET CSE | December 2012 | Part 2 | Question: 19 top

The maturity levels used to measure a process are

A. Initial, Repeatable, Defined, Managed, Optimized
B. Primary, Secondary, Defined, Managed, Optimized
C. Initial, Stating, Defined, Managed, Optimized
D. None of the above

ugcnetcse-dec2012-paper2 non-gate is&software-engineering

Answer key

## 27.21.6 Is&software Engineering: UGC NET CSE | December 2012 | Part 2 | Question: 6 top

Component level design is concerned with

A. Flow oriented analysis
B. Class based analysis
C. Both of the above
D. None of the above

ugcnetcse-dec2012-paper2 non-gate is&software-engineering

Answer key

## 27.21.7 Is&software Engineering: UGC NET CSE | December 2013 | Part 2 | Question: 10 top

Testing of software with actual data and in actual environment is called

A. Alpha testing
B. Beta testing
C. Regression testing
D. None of the above

ugcnetcse-dec2013-paper2 is&software-engineering

Answer key

## 27.21.8 Is&software Engineering: UGC NET CSE | December 2013 | Part 2 | Question: 7 top

The relationship of data elements in a module is called

A. Coupling
B. Modularity
C. Cohesion
D. Granularity

ugcnetcse-dec2013-paper2 is&software-engineering

Answer key

## 27.21.9 Is&software Engineering: UGC NET CSE | December 2013 | Part 2 | Question: 8 top

Software Configuration Management is the discipline for systematically controlling

A. the changes due to the evolution of work products as the project proceeds
B. the changes due to defects (bugs) being found and then fixed
C. the changes due to requirement changes
D. all of the above

ugcnetcse-dec2013-paper2 is&software-engineering

Answer key

## 27.21.10 Is&software Engineering: UGC NET CSE | December 2013 | Part 2 | Question: 9 top

Which one of the following is not a step of requirement engineering?

A. Requirement elicitation
B. Requirement analysis
C. Requirement design
D. Requirement documentation

ugcnetcse-dec2013-paper2 is&software-engineering

Answer key

## 27.21.11 Is&software Engineering: UGC NET CSE | December 2013 | Part 3 | Question: 9 top

Which of the following is not a software myth?

A. Once we write the program and get it to work, our job is done
B. Projects requirements continually change, but change can be easily accommodated because software is flexible
C. If we get behind schedule, we can add more programmers and catch up
D. If an organization does not understand how to control software projects internally, it will invariably struggle when it outsources software projects.

ugcnetcse-dec2013-paper3 is&software-engineering

Answer key

## 27.21.12 Is&software Engineering: UGC NET CSE | December 2015 | Part 3 | Question: 25 top

Which of the following non-functional quality attributes is not highly affected by the architecture of the software?

A. Performance B. Reliablity C. Usability D. Portability

ugcnetcse-dec2015-paper3 is&software-engineering

Answer key

## 27.21.13 Is&software Engineering: UGC NET CSE | December 2015 | Part 3 | Question: 72 top

Which one of the following statements is incorrect?

A. Pareto analysis is a statistical method used for analyzing causes, and is one of the primary tools for quality management.
B. Reliability of a software specifies the probability of failure-free operation of that software for a given time duration.
C. The reliability of a system can also be specified as the Mean Time To Failure (MTTF).
D. In white-box testing, the test cases are decided from the specifications or the requirements.

ugcnetcse-dec2015-paper3 is&software-engineering

Answer key

## 27.21.14 Is&software Engineering: UGC NET CSE | December 2015 | Part 3 | Question: 74 top

Which one of the following statements, related to the requirements phase in Software Engineering, is incorrect?

A. “Requirement validation” is one of the activities in the requirements phase.
B. “Prototyping” is one of the methods for requirement analysis.
C. “Modelling-oriented approach” is one of the methods for specifying the functional specifications.
D. “Function points” is one of the most commonly used size metric for requirements.

ugcnetcse-dec2015-paper3 is&software-engineering

Answer key

## 27.21.15 Is&software Engineering: UGC NET CSE | January 2017 | Part 2 | Question: 41 top

Software Engineering is an engineering discipline that is concerned with:

A. how computer systems work.
B. theories and methods that underlie computers and software systems.
C. all aspects of software production
D. all aspects of computer-based systems development, including hardware, software and process engineering.

ugcnetjan2017ii is&software-engineering

Answer key

## 27.21.16 Is&software Engineering: UGC NET CSE | January 2017 | Part 2 | Question: 42 top

Which of the following is not one of three software product aspects addressed by McCall's software quality factors ?

A. Ability to undergo change
B. Adaptiability to new environments
C. Operational characteristics
D. Production costs and scheduling

ugcnetjan2017ii is&software-engineering

Answer key

## 27.21.17 Is&software Engineering: UGC NET CSE | January 2017 | Part 2 | Question: 43 top

Which of the following statement(s) is/are true with respect to software architecture?

$S1$ : Coupling is a measure of how well the things grouped together in a module belong together logically.

$S2$ : Cohesion is a measure of the degree of interaction between software modules.

$S3$ : If coupling is low and cohesion is high then it is easier to change one module without affecting others.

A. Only $S1$ and $S2$ B. Only $S3$ C. All of $S1$, $S2$ and $S3$ D. Only $S1$

ugcnetjan2017ii is&software-engineering

Answer key

## 27.21.18 Is&software Engineering: UGC NET CSE | January 2017 | Part 2 | Question: 44 top

The prototyping model of software development is:

A. a reasonable approach when requirements are well-defined.
B. a useful approach when a customer cannot define requirements clearly.
C. the best approach to use for projects with large development teams.
D. a risky model that rarely produces a meaningful product.

ugcnetjan2017ii is&software-engineering

Answer key

## 27.21.19 Is&software Engineering: UGC NET CSE | January 2017 | Part 3 | Question: 45 top

Match the terms related to Software Configuration Management (SCM) in List-I with the descriptions in List-II.

| | List-I | | List-II |
|---|---|---|---|
| I. | Version | A. | An instance of a system that is distributed to customers |
| II. | Release | B. | An instance of a system which is functionally identical to other instances but designed for different hardware/software instances. |
| III. | Variant | C. | An instance of a system that differs, in some way, from other instances |

**Codes:**

A. I-B; II-C; III-C
B. I-C; II-A; III-B
C. I-C; II-B; III-A
D. I-B; II-A; III-C

ugcnetcse-jan2017-paper3 is&software-engineering

Answer key

## 27.21.20 Is&software Engineering: UGC NET CSE | January 2017 | Part 3 | Question: 46 top

A software project was estimated at $352$ Function Points $(\mathrm{FP})$. A four person team will be assigned to this project consisting of an architect, two programmers, and a tester The salary of the architect is ₹$80,000$ per month, the programmer ₹$60,000$ per month and the tester ₹$50,000$ per month. The average productivity for the team is $8\ \mathrm{FP}$ per person month. Which of the following represents the projected cost of the project?

A. ₹$28,16,000$
B. ₹$20,90,000$
C. ₹$26,95,000$
D. ₹$27,50,000$

ugcnetcse-jan2017-paper3 is&software-engineering

Answer key

## 27.21.21 Is&software Engineering: UGC NET CSE | January 2017 | Part 3 | Question: 47 top

Complete each of the following sentences in List-I on the left hand side by filling in the word or phrase from the List –II on the right hand side that best completes the sentence :

| | List-I | | List-II |
|---|---|---|---|
| I. | Determining whether you have built the right system is called _____ | A. | Software testing |
| II. | Determining whether you have built the system right is called _____ | B. | Software verification |
| III. | _____ is the process of demostrating | C. | Software debuggingthe existence of defects |
| IV. | _____ is the process of discovering the cause of a defect and fixing it | D. | Software validation |

**Codes :**

A. I-B, II-D, III-A, IV-C
B. I-B, II-D, III-C, IV-A
C. I-D, II-B, III-C, IV-A
D. I-D, II-B, III-A, IV-C

ugcnetcse-jan2017-paper3 is&software-engineering

Answer key

## 27.21.22 Is&software Engineering: UGC NET CSE | July 2018 | Part 2 | Question: 12 top

Match the following in Software Engineering :

| | List-I | | List-II |
|---|---|---|---|
| (a) | Product Complexity | (i) | Software Requirement Definition |
| (b) | Structured System Analysis | (ii) | Software Design |
| (c) | Coupling and Cohesion | (iii) | Validation Technique |
| (d) | Symbolic Execution | (iv) | Software Cost Estimation |

**Code :**

A. (a)-(ii); (b)-(iii); (c)-(iv); (d)-(i)
B. (a)-(iii); (b)-(i); (c)-(iv); (d)-(ii)
C. (a)-(iv); (b)-(i); (c)-(ii); (d)-(iii)
D. (a)-(iii); (b)-(iv); (c)-(i); (d)-(ii)

ugcnetcse-july2018-paper2 is&software-engineering

Answer key

## 27.21.23 Is&software Engineering: UGC NET CSE | July 2018 | Part 2 | Question: 13 top

Which one of the following is not typically provided by Source Code Management Software?

A. Synchronization
B. Versioning and Revision history
C. Syntax highlighting
D. Project forking

ugcnetcse-july2018-paper2 is&software-engineering

Answer key

## 27.21.24 Is&software Engineering: UGC NET CSE | July 2018 | Part 2 | Question: 14 top

A software system crashed 20 times in the year 2017 and for each crash, it took 2 minutes to restart. Approximately, what was the software availability in that year?

A. 96.9924%
B. 97.9924%
C. 98.9924%
D. 99.9924%

ugcnetcse-july2018-paper2 is&software-engineering

Answer key

## 27.21.25 Is&software Engineering: UGC NET CSE | July 2018 | Part 2 | Question: 18 top

Reasons to re-engineer a software include:

P: Allow legacy software to quickly adapt to the changing requirements

Q: Upgrade to newer technologies/platforms/paradigm (for example, object-oriented)

R: Improve software maintainability

S: Allow change in the functionality and architecture of the software

**Code:**

A. P, R and S only B. P and R only C. P, Q and S only D. P, Q and R only

ugcnetcse-july2018-paper2 is&software-engineering

Answer key

## 27.21.26 Is&software Engineering: UGC NET CSE | July 2018 | Part 2 | Question: 19 top

Which of the following is not a key strategy followed by the clean room approach to software development?

A. Formal specification
B. Dynamic verification
C. Incremental development
D. Statistical testing of the system

ugcnetcse-july2018-paper2 is&software-engineering

Answer key

## 27.21.27 Is&software Engineering: UGC NET CSE | July 2018 | Part 2 | Question: 20 top

Which of the following statements is/are True?

P: Refactoring is the process of changing a software system in such a way that it does not alter the external behavior of the code yet improves the internal architecture

Q: An example of refactoring is adding new features to satisfy a customer requirement discovered after a project is shipped

**Code:**

A. P only B. Q only C. Both P and Q D. Neither P nor Q

ugcnetcse-july2018-paper2 is&software-engineering

Answer key

## 27.21.28 Is&software Engineering: UGC NET CSE | June 2010 | Part 2 | Question: 41 top

Software engineering primarily aims on

A. Reliable software
B. Cost effective software
C. Reliable and cost effective software
D. None of the above

ugcnetcse-june2010-paper2 is&software-engineering

Answer key

## 27.21.29 Is&software Engineering: UGC NET CSE | June 2012 | Part 2 | Question: 20 top

Main aim of software engineering is to produce

A. program
B. software
C. within budget
D. software within budget in the given schedule

ugcnetcse-june2012-paper2 non-gate is&software-engineering

Answer key

## 27.21.30 Is&software Engineering: UGC NET CSE | June 2012 | Part 2 | Question: 21 top

Key process areas of CMM level 4 are also classified by a process which is

A. CMM level 2 B. CMM level 3 C. CMM level 5 D. All of the above

ugcnetcse-june2012-paper2 non-gate is&software-engineering

Answer key

## 27.21.31 Is&software Engineering: UGC NET CSE | June 2012 | Part 2 | Question: 22 top

Validation means

A. are we building the product right
B. are we building the right product
C. verification of fields
D. None of the above

ugcnetcse-june2012-paper2 is&software-engineering non-gate

Answer key

## 27.21.32 Is&software Engineering: UGC NET CSE | June 2012 | Part 2 | Question: 23 top

If a process is under statistical control, then it is

A. Maintainable B. Measurable C. Predictable D. Verifiable

ugcnetcse-june2012-paper2 non-gate is&software-engineering

Answer key

## 27.21.33 Is&software Engineering: UGC NET CSE | June 2012 | Part 2 | Question: 24 top

In a function oriented design, we

A. minimize cohesion and maximize coupling
B. maximize cohesion and minimize coupling
C. maximize cohesion and maximize coupling
D. minimize cohesion and minimize coupling

ugcnetcse-june2012-paper2 non-gate is&software-engineering

Answer key

## 27.21.34 Is&software Engineering: UGC NET CSE | June 2012 | Part 2 | Question: 25 top

Which of the following metric does not depend on the programming language used?

A. Line of code
B. Function count
C. Member of token
D. All of the above

non-gate is&software-engineering ugcnetcse-june2012-paper2

Answer key

## 27.21.35 Is&software Engineering: UGC NET CSE | June 2012 | Part 2 | Question: 43 top

Reliability of software is directly dependent on

A. quality of the design
B. number of errors present
C. software engineers experience
D. user requirement

non-gate is&software-engineering ugcnetcse-june2012-paper2

Answer key

## 27.21.36 Is&software Engineering: UGC NET CSE | June 2012 | Part 3 | Question: 37 top

Are we building the right product? – This statement refers to

A. Verification
B. Validation
C. Testing
D. Software quality assurance

ugcnetcse-june2012-paper3 is&software-engineering

Answer key

## 27.21.37 Is&software Engineering: UGC NET CSE | June 2013 | Part 2 | Question: 3 top

While estimating the cost of software, Lines Of Code (LOC) and Function Points (FP) are used to measure which one of the following?

A. Length of code
B. Size of software
C. Functionality of software
D. None of the above

is&software-engineering ugcnetcse-june2013-paper2

Answer key

## 27.21.38 Is&software Engineering: UGC NET CSE | June 2014 | Part 2 | Question: 11 top

$KPA$ in $CMM$ stands for

A. Key Process Area
B. Key Product Area
C. Key Principal Area
D. Key Performance Area

ugcnetcse-june2014-paper2 is&software-engineering

Answer key

## 27.21.39 Is&software Engineering: UGC NET CSE | June 2014 | Part 2 | Question: 13 top

_____ of a system is the structure or structures of the system which comprise software elements, the externally visible properties of these elements and the relationship amongst them.

A. Software construction
B. Software evolution
C. Software architecture
D. Software reuse

ugcnetcse-june2014-paper2 is&software-engineering

Answer key

## 27.21.40 Is&software Engineering: UGC NET CSE | June 2014 | Part 2 | Question: 28 top

A software agent is defined as

I. A software developed for accomplishing a given task.
II. A computer program which is capable of acting on behalf of the user in order to accomplish a given computational task.
III. An open source software for accomplishing a given task.

A. $I$
B. $II$
C. $III$
D. All of the above

ugcnetcse-june2014-paper2 is&software-engineering

Answer key

## 27.21.41 Is&software Engineering: UGC NET CSE | June 2014 | Part 3 | Question: 19 top

Match the following :

| | List – I | | List – II |
|---|---|---|---|
| a. | Correctness | i. | The extent to which a software tolerates the unexpected problems. |
| b. | Accuracy | ii. | The extent to which a software meets its specification |
| c. | Robustness | iii. | The extent to which a software has the specified functions |
| d. | Completeness | iv. | Meeting specifications with precision |

**Codes :**

A. a-ii, b-iv, c-i, d-iii
B. a-i, b-ii, c-iii, d-iv
C. a-ii, b-i, c-iv, d-iii
D. a-iv, b-ii, c-i, d-iii

ugcnetjune2014iii is&software-engineering

Answer key

## 27.21.42 Is&software Engineering: UGC NET CSE | June 2014 | Part 3 | Question: 20 top

Which one of the following is not a definition of error ?

A. It refers to the discrepancy between a computed, observed or measured value and the true, specified or theoretically correct value.
B. It refers to the actual output of a software and the correct output.
C. It refers to a condition that causes a system to fail.
D. It refers to human action that results in software containing a defect or fault.

ugcnetjune2014iii is&software-engineering

Answer key

## 27.21.43 Is&software Engineering: UGC NET CSE | June 2016 | Part 2 | Question: 41 top

If $S_1$ is total number of modules defined in the program architecture, $S_3$ is the number of modules whose correct function depends on prior processing then the number of modules not dependent on prior processing

is:

A. $1+\frac{S_3}{S_1}$ B. $1-\frac{S_3}{S_1}$ C. $1+\frac{S_1}{S_3}$ D. $1-\frac{S_1}{S_3}$

ugcnetcse-june2016-paper2 is&software-engineering

Answer key

## 27.21.44 Is&software Engineering: UGC NET CSE | June 2016 | Part 3 | Question: 44 top

Match the software maintenance activities in List-I to its meaning in List-II.

| | List-I | | List-II |
|---|---|---|---|
| a. | Corrective | i. | Concerning with performing activities to reduce the software complexity thereby improving program understandability and increasing software maintainability |
| b. | Adaptive | ii. | Concerned with fixing errors that are observed when the software is in use |
| c. | Perfective | iii. | Concerned with the change in the software that takes place to make the software adaptable to new environment (both hardware and software). |
| d. | Preventive | iv. | Concerned with the change in the software that takes place to make the software adaptable to changing user requirements |

**Codes :**

A. a-iv, b-i, c-iii, d-ii
B. a-iv, b-i, c-ii, d-iii
C. a-iv, b-ii, c-i, d-iii
D. a-i, b-iii, c-iv, d-ii

ugcnetcse-june2016-paper3 is&software-engineering

Answer key

## 27.21.45 Is&software Engineering: UGC NET CSE | Junet 2015 | Part 3 | Question: 44 top

Which design matric is used to measure the compactness of the program in terms of lines of code?

A. Consistency B. Conciseness C. Efficiency D. Accuracy

is&software-engineering non-gate ugcnetcse-june2015-paper3

Answer key

## 27.21.46 Is&software Engineering: UGC NET CSE | Junet 2015 | Part 3 | Question: 45 top

Requirements prioritization and negotiation belongs to

A. Requirements validation
B. Requirements elicitation
C. Feasibility study
D. Requirements reviews

is&software-engineering non-gate ugcnetcse-june2015-paper3

Answer key

## 27.21.47 Is&software Engineering: UGC NET CSE | Junet 2015 | Part 3 | Question: 60 top

Match the following :

| | List-I | | List-II |
|---|---|---|---|
| (a) | Joint Application Design (JAD) | (i) | Delivers functionality in rapid iteration measured in weeks and needs frequent communication, development, testing and delivery |
| (b) | Computer Aided Software Engineering | (ii) | Reusable applications generally with one specific function. It is closely linked with idea of web services and service oriented architecture |
| (c) | Agile development | (iii) | Tools to automate many tasks of SDLC |
| (d) | Component Based Technology | (iv) | A group based tool for collecting user requirements and creating system design. Mostly used in analysis and design stages of SDLC |

**Codes :**

A. (a)-(i), (b)-(iii), (c)-(ii), (d)-(iv)
B. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)
C. (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)
D. (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)

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Answer key

## 27.21.48 Is&software Engineering: UGC NET CSE | October 2020 | Part 2 | Question: 19 top

Which of the following $UML$ diagrams has a static view?

A. Collaboration diagram
B. Use-Case diagram
C. State chart diagram
D. Activity diagram

ugcnetcse-oct2020-paper2 non-gate is&software-engineering

Answer key

## 27.21.49 Is&software Engineering: UGC NET CSE | October 2020 | Part 2 | Question: 20 top

Modifying the software by restructuring is called

A. Adaptive maintenance
B. Corrective maintenance
C. Perfective maintenance
D. Preventive maintenance

ugcnetcse-oct2020-paper2 non-gate is&software-engineering

Answer key

## 27.21.50 Is&software Engineering: UGC NET CSE | October 2020 | Part 2 | Question: 21 top

A company has a choice of two languages $L_1$ and $L_2$ to develop a software for their client. Number of LOC required to develop an application in $L_2$ is thrice the LOC in language $L_1$. Also, software has to be maintained for next $10$ years. Various parameters for two languages are given below to decide which language should be preferred for development.

| PARAMETER | $L_1$ | $L_2$ |
|---|---|---|
| Man-year needed for development | LOC/1000 | LOC/1000 |
| Development cost | Rs. 70,000 | Rs. 90,000 |
| Cost of Maintenance per year | Rs.1,00,000 | Rs.40,000 |

Total cost of project include cost of development and maintenance. What is the $\text{LOC}$ for $L_1$ for which cost of developing the software with both languages must be same?

A. 2000
B. 6000
C. 3000
D. 5000

ugcnetcse-oct2020-paper2 non-gate is&software-engineering

Answer key

## 27.21.51 Is&software Engineering: UGC NET CSE | October 2020 | Part 2 | Question: 22 top

A Software project was estimated at $864$ Function Points. A six person team will be assigned to project consisting of a requirement gathering person, one designer, two programmers and two testers. The salary of the designer is $\text{Rs. } 70,000$ per month, requirement gatherer is $\text{Rs. } 50,000$ per month, programmer is $\text{Rs. } 60,000$ per month and a tester is $\text{Rs. } 60,000$ per month. Average productivity for the team is $12$ FP per person month. Which of the following represents the projected cost of the project

A. $\text{Rs. } 33,20,000$
B. $\text{Rs. } 43,20,000$
C. $\text{Rs. } 33,10,000$
D. $\text{Rs. } 22,10,000$

ugcnetcse-oct2020-paper2 non-gate is&software-engineering

Answer key

## 27.21.52 Is&software Engineering: UGC NET CSE | October 2020 | Part 2 | Question: 45 top

Which of the following statements regarding XML is/are True?

a. XML is a set of tags designed to describe a system for displaying data and images
b. XML defines a syntax for displaying data and images
c. XML tags are not predefined, but must be defined before they can be used
d. XML tags are not predefined, but they differ from application to application

Choose the correct answer from the options given below:

A. $(a)$ and $(b)$ only
B. $(a)$ and $(c)$ only
C. $(b)$ and $(c)$ only
D. $(a)$ $(b)$ and $(c)$

ugcnetcse-oct2020-paper2 non-gate is&software-engineering

## 27.21.53 Is&software Engineering: UGC NET CSE | October 2020 | Part 2 | Question: 49 top

Software reliability is described with respect to

a. Execution Time
b. Calender Time
c. Clock Time

Choose the correct answer from the options given below:

A. $(a)$ and $(b)$ only
B. $(b)$ and $(c)$ only
C. $(a)$, $(b)$ and $(c)$
D. $(a)$ and $(c)$ only

ugcnetcse-oct2020-paper2 non-gate is&software-engineering

Answer key

## 27.21.54 Is&software Engineering: UGC NET CSE | October 2020 | Part 2 | Question: 50 top

To create an object-behavioral model, the analyst performs the following steps:

a. Evaluates all use-cases
b. Builds state transition diagram for the system
c. Reviews the object behaviour model to verify accuracy and consistency
d. Identifies events that do not derive the interaction sequence

Choose the correct answer from the options given below:

A. $(a)$, $(b)$ and $(c)$ only
B. $(a)$, $(b)$ and $(d)$ only
C. $(b)$, $(c)$ and $(d)$ only
D. $(a)$, $(c)$ and $(d)$ only

ugcnetcse-oct2020-paper2 non-gate is&software-engineering

## 27.21.55 Is&software Engineering: UGC NET CSE | October 2020 | Part 2 | Question: 51 top

Which of the following is/are behavioral testing technique(s)?

a. Equivalence Partitioning
b. Graph-Based Treating Method
c. Boundary Value Analysis
d. Data flow Testing
e. Loop Testing

Choose the correct answer from the options given below:

A. $(b)$ and $(d)$ only
B. $(a)$, $(b)$ and $(c)$ only
C. $(d)$ and $(e)$ only
D. $(a)$, $(c)$ and $(e)$ only

ugcnetcse-oct2020-paper2 non-gate is&software-engineering

Answer key

## 27.21.56 Is&software Engineering: UGC NET CSE | October 2020 | Part 2 | Question: 68 top

Match list I with List II

With reference to CMM developed by Software Engineering Institute (SEI)

| | List I | | List II |
|---|---|---|---|
| $(A)$ | INITIAL | $(I)$ | Process measurement |
| $(B)$ | REPEATABLE | $(II)$ | Process definition |
| $(C)$ | DEFINED | $(III)$ | Project management |
| $(D)$ | MANAGED | $(IV)$ | ADHOC |

Choose the correct answer from the options given below:

A. $A-III, B-IV, C-II, D-I$
B. $A-IV, B-III, C-I, D-II$
C. $A-IV, B-III, C-II, D-I$
D. $A-III, B-IV, C-I, D-II$

ugcnetcse-oct2020-paper2 non-gate is&software-engineering

Answer key

## 27.21.57 Is&software Engineering: UGC NET CSE | October 2020 | Part 2 | Question: 77 top

Arrange the following types of Cohesion from the best to worst type.

a. Logical Cohesion
b. Sequential Cohesion
c. Communication Cohesion
d. Temporal Cohesion
e. Procedural Cohesion

Choose the correct answer from the options given below:

A. $a \rightarrow d \rightarrow e \rightarrow c \rightarrow b$
B. $a \rightarrow e \rightarrow d \rightarrow c \rightarrow b$
C. $b \rightarrow e \rightarrow c \rightarrow d \rightarrow a$
D. $b \rightarrow c \rightarrow e \rightarrow d \rightarrow a$

ugcnetcse-oct2020-paper2 non-gate is&software-engineering

Answer key

## 27.21.58 Is&software Engineering: UGC NET CSE | October 2020 | Part 2 | Question: 85 top

Statement $I$: Quality control involves the series of inspections, reviews and tests used throughout the software process, to ensure each work product meets the requirements placed upon it.

Statement $II$: Quality assurance consists of auditing and reporting functions of management

In the light of the above statements, choose the correct answer from the options given below

A. Both Statement $I$ and Statement $II$ are true
B. Both Statement $I$ and Statement $II$ are false
C. Statement $I$ is correct but Statement $II$ is false
D. Statement $I$ is incorrect but Statement $II$ is true

ugcnetcse-oct2020-paper2 non-gate is&software-engineering

Answer key

### 27.21.59 Is&software Engineering: UGC NET CSE | September 2013 | Part 2 | Question: 28 top

The _____ of a program or computing system is the structure or structures of the system, which comprise software components, the externally visible properties of these components and the relationship among them.

A. E-R diagram
B. Data flow diagram
C. Software architecture
D. Software design

ugcnetsep2013ii is&software-engineering

Answer key

## 27.22 Life Cycle Model (1) top

### 27.22.1 Life Cycle Model: UGC NET CSE | Junet 2015 | Part 2 | Question: 43 top

Which process model is also called as classic life cycle model?

A. Waterfall model
B. RAD model
C. Prototyping model
D. Incremental model

ugcnetcse-june2015-paper2 is&software-engineering life-cycle-model

Answer key

## 27.23 Mis (1) top

### 27.23.1 Mis: UGC NET CSE | June 2016 | Part 3 | Question: 71 top

Which of the following is characteristic of MIS?

A. Provides guidance in identifying problems, finding and evaluating alternative solutions, and selecting or comparing alternatives
B. Draws on diverse yet predictable data resources to aggregate and summarize data
C. High volume, data capture focus
D. Has as its goal the efficiency of data movement and processing and interfacing different TPS

ugcnetcse-june2016-paper3 mis is&software-engineering

Answer key

## 27.24 Model View Controller (1) top

### 27.24.1 Model View Controller: UGC NET CSE | June 2019 | Part 2 | Question: 52 top

The M components in MVC are responsible for

A. user interface
B. security of the system
C. business logic and domain objects
D. translating between user interface actions/events and operations on the domain objects

ugcnetcse-june2019-paper2 model-view-controller

Answer key

## 27.25 Object Oriented Modelling (1) top

### 27.25.1 Object Oriented Modelling: UGC NET CSE | December 2014 | Part 3 | Question: 41 top

What is true about $UML$ stereotypes ?

A. Stereotype is used for extending the $UML$ language.
B. Stereotyped class must be abstract
C. The stereotype indicates that the $UML$ element cannot be changed
D. UML profiles can be stereotyped for backward compatibility

ugcnetcse-dec2014-paper3 object-oriented-modelling uml

Answer key

## 27.26 Optimization (1) top

### 27.26.1 Optimization: UGC NET CSE | June 2012 | Part 3 | Question: 49 top

In any simplex table, if corresponding to any negative $\Delta$ j, all elements of the column are negative or zero, the solution under the test is

A. degenerate solution
B. unbounded solution
C. alternative solution
D. non-existing solution

ugcnetcse-june2012-paper3 optimization linear-programming

Answer key

## 27.27 Project Planning (1) top

### 27.27.1 Project Planning: UGC NET CSE | Junet 2015 | Part 2 | Question: 45 top

Which one from the following is highly associated activity of project planning?

A. Keep track of the progress
B. Compare the actual and planned progress and costs
C. Identify the activities, milestones and deliverables produced by a project
D. Both B and C

ugcnetcse-june2015-paper2 is&software-engineering project-planning

Answer key

## 27.28 Project Tracking (1) top

### 27.28.1 Project Tracking: UGC NET CSE | June 2019 | Part 2 | Question: 59 top

Which of the following are the primary objectives of risk monitoring in software project tracking?

P: To assess whether predicted risks do, in fact, occur

Q: To ensure that risk aversion steps defined for the risk are being properly applied

R: To collect information that can be used for future risk analysis

A. Only P and Q
B. Only P and R
C. Only Q and R
D. All of P, Q, R

ugcnetcse-june2019-paper2 project-tracking risk-monitoring

Answer key

## 27.29 Risk Management (3) top

### 27.29.1 Risk Management: UGC NET CSE | December 2014 | Part 3 | Question: 45 top

Assume that the software team defines a project risk with $80\%$ probability of occurrence of risk in the following manner: Only $70$ percent of the software components scheduled for reuse will be integrated into the application and the remaining functionality will have to be custom developed. If $60$ reusable components were planned with average component size as $100$ LOC and software engineering cost for each LOC as $14, then the risk exposure would be

A. $25,200
B. $20,160
C. $17,640
D. $15,120

ugcnetcse-dec2014-paper3 is&software-engineering risk-management

Answer key

### 27.29.2 Risk Management: UGC NET CSE | June 2014 | Part 2 | Question: 12 top

Which one of the following is not a risk management technique for managing the risk due to unrealistic schedules and budgets ?

A. Detailed multi source cost and schedule estimation.
B. Design cost
C. Incremental development
D. Information hiding

ugcnetcse-june2014-paper2 is&software-engineering risk-management

Answer key

### 27.29.3 Risk Management: UGC NET CSE | September 2013 | Part 3 | Question: 50 top

Sixty reusable components were available for an application. If only 70% of these components can be used, rest 30% would have to be developed from scratch. If average component is 100 LOC and cost of each LOC is Rs. 14, what will be risk of exposure if risk probability is 80%?

A. Rs. 25, 200
B. Rs. 20, 160
C. Rs. 25, 160
D. Rs. 20, 400

ugcnetcse-sep2013-paper3 is&software-engineering risk-management

Answer key

## 27.30 Size Metrices (1) top

### 27.30.1 Size Metrices: UGC NET CSE | Junet 2015 | Part 2 | Question: 41 top

Match the following:

| | | | |
|---|---|---|---|
| a. | Size-oriented metrics | $i.$ | uses number of external interfaces as one of the measurement parameters |
| b. | Function-oriented metrics | $ii.$ | originally designed to be applied to business information systems |
| c. | Extended function point metrics | $iii.$ | derived by normalizing quality and/or productivity measures by considering the size of the software |
| d. | Function point | $iv.$ | uses algorithm characteristics as one of the measurement parameter |

A. $a-iii, b-iv, c-i, d-ii$
B. $a-ii, b-i, c-iv, d-iii$
C. $a-iv, b-ii, c-iii, d-i$
D. $a-iii, b-i, c-iv, d-ii$

ugcnetcse-june2015-paper2 size-metrices is&software-engineering

Answer key

## 27.31 Software (1) top

### 27.31.1 Software: UGC NET CSE | January 2017 | Part 2 | Question: 45 top

A software design pattern used to enhance the functionality of an object at run-time is:

A. Adapter
B. Decorator
C. Delegation
D. Proxy

ugcnetjan2017ii software non-gate is&software-engineering

Answer key

## 27.32 Software Configuration (1) top

### 27.32.1 Software Configuration: UGC NET CSE | December 2013 | Part 3 | Question: 7 top

A process which defines a series of tasks that have the following four primary objectives is known as

1. to identify all items that collectively define the software configuration
2. to manage changes to one or more of these items
3. to facilitate the construction of different versions of an application
4. to ensure that software quality is maintained as the configuration evolves over time

A. Software Quality Management Process
B. Software Configuration Management Process
C. Software Version Management Process
D. Software Change Management Process

ugcnetcse-dec2013-paper3 is&software-engineering software-configuration

Answer key

## 27.33 Software Cost Estimation (1) top

### 27.33.1 Software Cost Estimation: UGC NET CSE | June 2014 | Part 3 | Question: 18 top

Consider a project with the following functional units :

Number of user inputs = $50$

Number of user outputs = $40$

Number of user enquiries = $35$

Number of user files = $06$

Number of external interfaces = $04$

Assuming all complexity adjustment factors and weighing factors as average, the function points for the project will be

A. 135 B. 722 C. 675 D. 672

ugcnetjune2014iii is&software-engineering software-cost-estimation

Answer key

## 27.34 Software Design (14) top

### 27.34.1 Software Design: UGC NET CSE | August 2016 | Part 2 | Question: 43 top

The quick design of a software that is visible to end users leads to _____.

A. Iterative model
B. Prototype model
C. Spiral model
D. Waterfall model

ugcnetcse-aug2016-paper2 is&software-engineering software-design

Answer key

### 27.34.2 Software Design: UGC NET CSE | December 2011 | Part 2 | Question: 41 top

Software risk estimation involves following two tasks :

A. Risk magnitude and risk impact
B. Risk probability and risk impact
C. Risk maintenance and risk impact
D. Risk development and risk impact

ugcnetcse-dec2011-paper2 is&software-engineering software-design

Answer key

### 27.34.3 Software Design: UGC NET CSE | December 2014 | Part 2 | Question: 43 top

The software _____ of a program or a computing system is the structure or structures of the system, which comprise software components, the externally visible properties of those components, and the relationships among them.

A. Design
B. Architecture
C. Process
D. Requirement

ugcnetcse-dec2014-paper2 is&software-engineering software-design

Answer key

### 27.34.4 Software Design: UGC NET CSE | July 2018 | Part 2 | Question: 17 top

A software design pattern often used to restrict access to an object is

A. adapter B. decorator C. delegation D. proxy

ugcnetcse-july2018-paper2 is&software-engineering software-design

Answer key

## 27.34.5 Software Design: UGC NET CSE | June 2010 | Part 2 | Question: 42 top

Top-down design does not require

A. Step-wise refinement
B. Loop invariants
C. Flow charting
D. Modularity

ugcnetcse-june2010-paper2 is&software-engineering software-design

Answer key

## 27.34.6 Software Design: UGC NET CSE | June 2010 | Part 2 | Question: 44 top

Design phase will usually be

A. Top-down
B. Bottom-up
C. Random
D. Centre fringing

ugcnetcse-june2010-paper2 is&software-engineering software-design

Answer key

## 27.34.7 Software Design: UGC NET CSE | June 2013 | Part 3 | Question: 1 top

The Software Maturity Index (SMI) is defined as $SMI = [M_f - (F_a + F_c + F_d)]/M_f$

where $M_f$= number of modules in current release

$F_a$ =the number of module in the current release that have been added

$F_c$ = the number of module in the current release that have been changed

$F_d$= the number of module in the current release that have been deleted

The product begins to stabilize when

A. SMI approaches 1
B. SMI approaches 0
C. SMI approaches -1
D. None of the above

ugcnetcse-june2013-paper3 is&software-engineering software-design non-gate

Answer key

## 27.34.8 Software Design: UGC NET CSE | June 2013 | Part 3 | Question: 10 top

Match the following :

| | | | |
|---|---|---|---|
| a. | RAID 0 | i. | Bit interleaved parity |
| b. | RAID 1 | ii. | Non redundant stripping |
| c. | RAID 2 | iii. | Mirrored disks |
| d. | RAID 3 | iv. | Error correcting codes |

**Codes:**

A. a-iv, b-i, c-ii, d-iii
B. a-iii, b-iv, c-i, d-ii
C. a-iii, b-i, c-iv, d-ii
D. a-iii, b-ii, c-iv, d-i

ugcnetcse-june2013-paper3 is&software-engineering software-design

Answer key

## 27.34.9 Software Design: UGC NET CSE | June 2013 | Part 3 | Question: 3 top

_____ is a process model that removes defects before they can precipitate serious hazards.

A. Incremental model
B. Spiral model
C. Cleanroom software engineering
D. Agile model

ugcnetcse-june2013-paper3 is&software-engineering software-design

Answer key

## 27.34.10 Software Design: UGC NET CSE | June 2013 | Part 3 | Question: 5 top

The following three golden rules

- Place the user in control
- Reduce the user's memory load

- Make the interface consistent

are of

A. User satisfaction
B. Good interface design
C. Saving system's resources
D. None of these

ugcnetcse-june2013-paper3 is&software-engineering software-design

Answer key

## 27.34.11 Software Design: UGC NET CSE | June 2016 | Part 3 | Question: 45 top

Match each application/software design concept in List-I to its definition in List-II.

| | List-I | | List-II |
|---|---|---|---|
| I. | Coupling | (a) | Easy to visually inspect the design of the software and understand its purpose |
| II. | Cohesion | (b) | Easy to add functionability to a software without having to redesign it |
| III. | Scalable | (c) | Focus of a code upon a single goal |
| IV. | Readable | (d) | Relaince of a code module upon other code modules |

**Codes :**

A. I-b, II-a, III-d, IV-c
B. I-c, II-d, III-a, IV-b
C. I-d, II-c, III-b, IV-a
D. I-d, II-a, III-c, IV-b

ugcnetcse-june2016-paper3 is&software-engineering software-design

Answer key

## 27.34.12 Software Design: UGC NET CSE | Junet 2015 | Part 3 | Question: 42 top

Modulo design is used to maximize cohesion and minimize coupling. Which of the following is the key to implement this rule?

A. Inheritance
B. Polymorphism
C. Encapsulation
D. Abstraction

ugcnetcse-june2015-paper3 software-design is&software-engineering

Answer key

## 27.34.13 Software Design: UGC NET CSE | Junet 2015 | Part 3 | Question: 47 top

A Design Concept Refinement is a

A. Top-down approach
B. Complementary of abstraction concept
C. process of elaboration
D. All of the above

ugcnetcse-june2015-paper3 software-design is&software-engineering

Answer key

## 27.34.14 Software Design: UGC NET CSE | Junet 2015 | Part 3 | Question: 48 top

A software design is highly modular if

A. cohesion is functional and coupling is data type
B. cohesion is coincidental and coupling is data type
C. cohesion is sequential and coupling is content type
D. cohesion is functional and coupling is stamp type

ugcnetcse-june2015-paper3 is&software-engineering software-design

Answer key

## 27.35 Software Development (3) top

### 27.35.1 Software Development: UGC NET CSE | December 2009 | Part 2 | Question: 43 top

Software Engineering is a discipline that integrates _____ for the development of computer software.

(A) Process

(B) Methods

(C) Tools

(D) All

ugcnetcse-dec2009-paper2 is&software-engineering software-development

Answer key

### 27.35.2 Software Development: UGC NET CSE | July 2018 | Part 2 | Question: 11 top

Assume the following regarding the development of a software system P:

- Estimated lines of codes P : 33, 480 LOC
- Average productivity for P : 620 LOC per person -month
- Number of software developers : 6
- Average salary of a software developer : INR 50, 000 per month

If E, D and C are the estimated development effort (in person-month), estimated development time (in months), and estimated development cost (in INR Lac) respectively, then (E, D, C) = _____

A. (48, 8, 24) B. (54, 9, 27) C. (60, 10, 30) D. (42, 7, 21)

ugcnetcse-july2018-paper2 is&software-engineering software-development

Answer key

### 27.35.3 Software Development: UGC NET CSE | September 2013 | Part 2 | Question: 27 top

In which one of the following continuous process improvement is done?

A. ISO9001 B. RMMM C. CMM D. None of the above

ugcnetsep2013ii is&software-engineering software-development

Answer key

## 27.36 Software Development Life Cycle Models (11) top

### 27.36.1 Software Development Life Cycle Models: UGC NET CSE | August 2016 | Part 3 | Question: 44 top

Match each software lifecycle model in List – I to its description in List – II :

| | List-I | | List-II |
|---|---|---|---|
| I. | Code-and-Fix | a. | Assess risks at each step; do most critical action first |
| II. | Evolutionary Prototyping | b. | Build an initial small requirement specifications, code it, then "evolve" the specifications and code as needed |
| III. | Spiral | c. | Build initial requirement specification for several releases, then design-and-code in sequence |
| IV. | Stagged delivery | d. | Standard phases (requirements, design, code, test) in order |
| V. | Waterfall | e. | Write some code,debug it, repeat(i.e. ad-hoc) |

**Codes :**

A. I-e, II-b, III-a, IV-c, V-d
B. I-e,II-c, III-a IV-b, V-d
C. I-d, II-a, III-b, IV-c, V-e
D. I-c, II-e, III-a, IV-b, V-d

ugcnetcse-aug2016-paper3 is&software-engineering software-development-life-cycle-models

Answer key

## 27.36.2 Software Development Life Cycle Models: UGC NET CSE | December 2008 | Part 2 | Question: 44 top

Which level is called as "*defined*" in capability maturity model?

A. level 0
B. level 3
C. level 4
D. level 1

ugcnetcse-dec2008-paper2 is&software-engineering software-development-life-cycle-models

Answer key

## 27.36.3 Software Development Life Cycle Models: UGC NET CSE | December 2010 | Part 2 | Question: 42 top

Which one of these are not software maintenance activity ?

A. Error correction
B. Adaptation
C. Implementation of Enhancement
D. Establishing scope

ugcnetcse-dec2010-paper2 is&software-engineering software-development-life-cycle-models

Answer key

## 27.36.4 Software Development Life Cycle Models: UGC NET CSE | December 2010 | Part 2 | Question: 43 top

The system specification is the first deliverable in the computer system engineering process which does not include

A. Functional Description
B. Cost
C. Schedule
D. Technical Analysis

ugcnetcse-dec2010-paper2 is&software-engineering software-development-life-cycle-models

Answer key

## 27.36.5 Software Development Life Cycle Models: UGC NET CSE | December 2011 | Part 2 | Question: 13 top

For a data entry project for office staff who have never used computers before (user interface and user friendliness are extremely important), one will use

A. Spiral model
B. Component based model
C. Prototyping
D. Waterfall model

ugcnetcse-dec2011-paper2 is&software-engineering software-development-life-cycle-models

Answer key

## 27.36.6 Software Development Life Cycle Models: UGC NET CSE | December 2012 | Part 2 | Question: 24 top

RAD stands for

A. Rapid and Design
B. Rapid Aided Development
C. Rapid Application Development
D. Rapid Application Design

ugcnetcse-dec2012-paper2 is&software-engineering software-development-life-cycle-models

Answer key

## 27.36.7 Software Development Life Cycle Models: UGC NET CSE | December 2012 | Part 2 | Question: 48 top

_____ is an "umbrella" activity that is applied throughout the software engineering process.

A. Debugging
B. Testing
C. Designing
D. Software quality assurance

ugcnetcse-dec2012-paper2 is&software-engineering software-development-life-cycle-models

Answer key

## 27.36.8 Software Development Life Cycle Models: UGC NET CSE | December 2015 | Part 2 | Question: 47 top

Which of the following is not a software process model?

A. Prototyping B. Iterative C. Timeboxiing D. Glassboxing

ugcnetcse-dec2015-paper2 is&software-engineering software-development-life-cycle-models

Answer key

## 27.36.9 Software Development Life Cycle Models: UGC NET CSE | June 2016 | Part 2 | Question: 42 top

The ____ model is preferred for software development when the requirements are not clear.

A. Rapid Application Development
B. Rational Unified Process
C. Evolutionary Model
D. Waterfall Model

ugcnetcse-june2016-paper2 is&software-engineering software-development-life-cycle-models

Answer key

## 27.36.10 Software Development Life Cycle Models: UGC NET CSE | June 2019 | Part 2 | Question: 57 top

Match List-I with List-II:

| | List-I (Software Process Models) | | List-II (Software Systems) |
|---|---|---|---|
| $(a)$ | Waterfall model | $(i)$ | e-business software that starts with only the basic functionalities and then moves on to more advanced features |
| $(b)$ | Incremental development | $(ii)$ | An inventory control system for super-market to be developed within three months |
| $(c)$ | Prototyping | $(iii)$ | A virtual reality system for simulating vehicle nevigation in a highway |
| $(d)$ | RAD | $(iv)$ | Automate the manual system for student record maintenance in a school |

Choose the correct option from those given below:

A. a-ii; b-iv; c-i; d-iii
B. a-i; b-iii; c-iv; d-ii
C. a-iii; b-ii; c-iv; d-i
D. a-iv; b-i; c-iii; d-ii

ugcnetcse-june2019-paper2 software-development-life-cycle-models

Answer key

## 27.36.11 Software Development Life Cycle Models: UGC NET CSE | September 2013 | Part 2 | Question: 29 top

Working software is not available until late in the process in

A. Waterfall model
B. Prototyping model
C. Incremental model
D. Evolutionary Development model

ugcnetsep2013ii is&software-engineering software-development-life-cycle-models

Answer key

## 27.37 Software Development Models (1) top

### 27.37.1 Software Development Models: UGC NET CSE | June 2010 | Part 2 | Question: 43 top

Which model is simplest model in Software Development ?

A. Waterfall model B. Prototyping C. Iterative D. None of these

ugcnetcse-june2010-paper2 is&software-engineering software-development-models

Answer key

## 27.38 Software Intergrity (1) top

### 27.38.1 Software Intergrity: UGC NET CSE | June 2019 | Part 2 | Question: 56 top

A Web application and its support environment has not been fully fortified against attack. Web engineers estimate that the likelihood of repelling an attack is only $30$ percent. The application does not contain sensitive or controversial information, so the threat probability is $25$ percent. What is the integrity of the web application?

A. $0.625$ B. $0.725$ C. $0.775$ D. $0.825$

ugcnetcse-june2019-paper2 software-intergrity

Answer key

## 27.39 Software Maintenance (2) top

### 27.39.1 Software Maintenance: UGC NET CSE | Junet 2015 | Part 3 | Question: 46 top

Adaptive maintenance is a maintenance which _____

A. correct errors that were not discovered till testing phase
B. is carried out to port the existing software to a new environment
C. improves the system performance
D. both B and C

ugcnetcse-june2015-paper3 software-maintenance is&software-engineering

Answer key

### 27.39.2 Software Maintenance: UGC NET CSE | September 2013 | Part 3 | Question: 45 top

Improving processing efficiency or performance or restructuring of software to improve changeability is known as

A. Corrective maintenance
B. Perfective maintenance
C. Adaptive maintenance
D. Code maintenance

ugcnetcse-sep2013-paper3 is&software-engineering software-maintenance

Answer key

## 27.40 Software Metrics (3) top

### 27.40.1 Software Metrics: UGC NET CSE | December 2014 | Part 2 | Question: 44 top

Which one of the following set of attributes should not be encompassed by effective software metrics ?

A. Simple and computable
B. Consistent and objective
C. Consistent in the use of units and dimensions
D. Programming language dependent

ugcnetcse-dec2014-paper2 is&software-engineering software-metrics

Answer key

### 27.40.2 Software Metrics: UGC NET CSE | June 2012 | Part 3 | Question: 33 top

Which one of the following statements is incorrect?

A. The number of regions corresponds to the cyclomatic complexity
B. Cyclomatic complexity for a flow graph $G$ is $V(G) = N - E + 2$, where E is the number of edges and N is the number of nodes in flow graph.
C. Cyclomatic complexity for a flow graph $G$ is $V(G) = E - N + 2$, where E is the number of edges and N is the number of nodes in flow graph.
D. Cyclomatic complexity for a flow graph $G$ is $V(G) = P + 1$, where P is the number of predicate nodes contained in the flow graph G.

ugcnetcse-june2012-paper3 is&software-engineering software-metrics

Answer key

### 27.40.3 Software Metrics: UGC NET CSE | June 2016 | Part 3 | Question: 48 top

The number of function points of a proposed system is calculated as 500. Suppose that the system is planned to be developed in Java and the LOC/FP ratio of Jave is 50. Estimate teh effort (E) required to complete the project using the effort formula of basic COCOMO given: E=a(KLOC)$^b$

Assume that the values of a and b are 2.5 and 1.0 respectively

A. 25 person months
B. 75 person months
C. 62.5 person months
D. 72.5 person months

ugcnetcse-june2016-paper3 is&software-engineering software-metrics

Answer key

## 27.41 Software Process (1) top

### 27.41.1 Software Process: UGC NET CSE | December 2014 | Part 2 | Question: 41 top

_____ are applied throughout the software process.

A. Framework activities
B. Umbrella activities
C. Planning activities
D. Construction activities

ugcnetcse-dec2014-paper2 is&software-engineering software-process

Answer key

## 27.42 Software Quality Assurance (2) top

### 27.42.1 Software Quality Assurance: UGC NET CSE | August 2016 | Part 3 | Question: 46 top

The ISO quality assurance standard that applies to software Engineering is

A. ISO 9000 : 2004
B. ISO 9001 : 2000
C. ISO 9002 : 2001
D. ISO 9003 : 2004

ugcnetcse-aug2016-paper3 is&software-engineering software-quality-assurance

Answer key

### 27.42.2 Software Quality Assurance: UGC NET CSE | December 2012 | Part 3 | Question: 55 top

The factors that determine the quality of a software system are

A. correctness, reliability
B. efficiency, usability, maintainability
C. testability, portability, accuracy, error tolerances, expandability, access control, audit
D. All of the above

ugcnetcse-dec2012-paper3 is&software-engineering software-quality-assurance

Answer key

## 27.43 Software Quality Characteristics (1) top

### 27.43.1 Software Quality Characteristics: UGC NET CSE | June 2016 | Part 2 | Question: 45 top

The extent to which a software tolerates the unexpected problems, is termed as

A. Accuracy B. Reliability C. Correctness D. Robustness

ugcnetcse-june2016-paper2 software-quality-characteristics

Answer key

## 27.44 Software Reliability (8) top

### 27.44.1 Software Reliability: UGC NET CSE | August 2016 | Part 2 | Question: 45 top

The extent to which a software performs its intended functions without failures, is termed as

A. Robustness B. Correctness C. Reliability D. Accuracy

ugcnetcse-aug2016-paper2 is&software-engineering software-reliability

Answer key

### 27.44.2 Software Reliability: UGC NET CSE | December 2011 | Part 2 | Question: 16 top

Emergency fixes known as patches are result of

A. Adaptive maintenance
B. Perfective maintenance
C. Corrective maintenance
D. None of the above

ugcnetcse-dec2011-paper2 is&software-engineering software-reliability

Answer key

### 27.44.3 Software Reliability: UGC NET CSE | December 2014 | Part 3 | Question: 46 top

Maximum possible value of reliability is

A. 100 B. 10 C. 1 D. 0

ugcnetcse-dec2014-paper3 is&software-engineering software-reliability

Answer key

### 27.44.4 Software Reliability: UGC NET CSE | June 2013 | Part 3 | Question: 2 top

Match the following :

| | | | |
|---|---|---|---|
| a. | Watson-Felix model | i. | Failure intensity |
| b. | Quick-Fix model | ii. | Cost estimation |
| c. | Putnam resouce allocation model | iii. | Project planning |
| d. | Logarithmetic Poission Model | iv. | Maintainace |

**Codes :**

A. a-ii, b-i, c-iv, d-iii
B. a-i, b-ii, c-iv, d-iii
C. a-ii, b-i, c-iii, d-iv
D. a-ii, b-iv, c-iii, d-i

ugcnetcse-june2013-paper3 is&software-engineering software-reliability non-gate

Answer key

### 27.44.5 Software Reliability: UGC NET CSE | June 2013 | Part 3 | Question: 6 top

Software safety is a _____ activity that focuses on the identification and assessment of potential hazards that may affect software negatively and cause an entire system to fail.

A. Risk mitigation, monitoring and management
B. Software quality assurance
C. Software quality assurance
D. Defect removal efficiency

ugcnetcse-june2013-paper3 is&software-engineering software-reliability

Answer key

### 27.44.6 Software Reliability: UGC NET CSE | June 2014 | Part 3 | Question: 17 top

Assume that a program will experience 200 failures in infinite time. It has now experienced 100 failures. The initial failure intensity was 20 failures/CPU hr. Then the current failure intensity will be

A. 5 failured/CPU hr
B. 10 failured/CPU hr
C. 20 failured/CPU hr
D. 40 failured/CPU hr

ugcnetjune2014iii is&software-engineering software-reliability

Answer key

### 27.44.7 Software Reliability: UGC NET CSE | June 2016 | Part 3 | Question: 43 top

A server crashes on the average once in 30 days, that is, the Mean Time Between Failures (MTBF) is 30 days. When it happens it takes 12 hours to reboot it, that is, Mean Time To Repair (MTTR) is 12 hours. The availability of server with these reliability data values is approximately.

A. 96.3 %
B. 97.3 %
C. 98.3%
D. 99.3%

ugcnetcse-june2016-paper3 is&software-engineering software-reliability

Answer key

### 27.44.8 Software Reliability: UGC NET CSE | September 2013 | Part 3 | Question: 44 top

The failure intensity for a basic model as a function of failures experienced is given as $\lambda(\mu) - \lambda_0[1 - (\mu)/(V_0)]$ where $\lambda_0$ is the initial failure intensity at the start of the execution, $\mu$ is the average or expected number of failures at a given point in time, the quantity $V_0$ is the total number of failures that would occur in infinite time.

Assume that a program will experience 100 failures in infinite time, the initial failure intensity was 10 failures/CPU hr. Then the decrement of failures intensity per failure will be

A. 10 per CPU hr
B. 0.1 per CPU hr
C. -0.1 per CPU hr
D. 90 per CPU hr

ugcnetcse-sep2013-paper3 is&software-engineering software-reliability

Answer key

## 27.45 Software Requirement Specification (1) top

### 27.45.1 Software Requirement Specification: UGC NET CSE | September 2013 | Part 2 | Question: 31 top

Consider the following characteristics:

I. Correct and unambiguous
II. Complete and consistent
III. Ranked for importance and/or stability and verifiable
IV. Modifiable and Traceable

Which of the following is true for a good SRS?

A. I, II and III
B. I, III and IV
C. II, III and IV
D. I, II, III and IV

ugcnetsep2013ii is&software-engineering software-requirement-specification

Answer key

## 27.46 Software Requirement Specifications (1) top

### 27.46.1 Software Requirement Specifications: UGC NET CSE | August 2016 | Part 2 | Question: 41 top

Which of the following is used to determine the specificity of requirements ?

A. $\frac{n_1}{n_2}$
B. $\frac{n_1}{n_2}$
C. $n_1 + n_2$
D. $n_1 - n_2$

Where $n_1$ is the number of requirements for which all reviewers have identical interpretations, $n_2$ is number of requirements in a specification.

ugcnetcse-aug2016-paper2 is&software-engineering software-requirement-specifications

Answer key

## 27.47 Software Reuse (1) top

### 27.47.1 Software Reuse: UGC NET CSE | June 2019 | Part 2 | Question: 54 top

Software reuse is

A. the process of analysing software with the objective of recovering its design and specification
B. the process of using existing software artifacts and knowledge to build new software
C. concerned with reimplementing legacy system to make them more maintainable
D. the process of analysing software to create a representation of a higher level of abstraction and breaking software down into its parts to see how it works

ugcnetcse-june2019-paper2 software-reuse

Answer key

## 27.48 Software Testing (20) top

### 27.48.1 Software Testing: UGC NET CSE | August 2016 | Part 2 | Question: 44 top

For a program of $k$ variables, boundary value analysis yields _____ test cases.

A. $4k-1$ B. $4k$ C. $4k+1$ D. $2^k-1$

ugcnetcse-aug2016-paper2 is&software-engineering software-testing

Answer key

### 27.48.2 Software Testing: UGC NET CSE | December 2008 | Part 2 | Question: 43 top

Software Quality Assurance ($SQA$) encompasses :

A. verification
B. validation
C. both verification and validation
D. none of the above

ugcnetcse-dec2008-paper2 is&software-engineering software-testing

Answer key

### 27.48.3 Software Testing: UGC NET CSE | December 2009 | Part 2 | Question: 42 top

Any error whose cause cannot be identified anywhere within the software system is called _____

(A) Internal error

(B) External error

(C) Inherent error

(D) Logic error

ugcnetcse-dec2009-paper2 is&software-engineering software-testing

Answer key

### 27.48.4 Software Testing: UGC NET CSE | December 2009 | Part 2 | Question: 47 top

Black Box testing is done

(A) to show that s/w is operational at its interfaces i.e. input and output.
(B) to examine internal details of code.
(C) at client side.
(D) none of above.

ugcnetcse-dec2009-paper2 is&software-engineering software-testing

Answer key

## 27.48.5 Software Testing: UGC NET CSE | December 2010 | Part 2 | Question: 15 top

“Black” refers in the “Black-box” testing means

A. Characters of the movie “Black”
B. I – O is hidden
C. Design is hidden
D. Users are hidden

ugcnetcse-dec2010-paper2 is&software-engineering software-testing

Answer key

## 27.48.6 Software Testing: UGC NET CSE | December 2010 | Part 2 | Question: 41 top

Prototyping is used to

A. Test the software as an end product
B. Expand design details
C. Refine and establish requirements gathering
D. None of the above

ugcnetcse-dec2010-paper2 is&software-engineering software-testing

Answer key

## 27.48.7 Software Testing: UGC NET CSE | December 2011 | Part 2 | Question: 18 top

Following is used to demonstrate that the new release of software still performs the old one did by rerunning the old tests :

A. Functional testing
B. Path testing
C. Stress testing
D. Regression testing

ugcnetcse-dec2011-paper2 is&software-engineering software-testing

Answer key

## 27.48.8 Software Testing: UGC NET CSE | December 2012 | Part 2 | Question: 31 top

Basis path testing falls under

A. system testing
B. white box testing
C. black box testing
D. unit testing

ugcnetcse-dec2012-paper2 is&software-engineering software-testing

Answer key

## 27.48.9 Software Testing: UGC NET CSE | December 2013 | Part 3 | Question: 8 top

One weakness of boundary value analysis and equivalence partitioning is

A. they are not effective
B. they do not explore combinations of input circumstances
C. they explore combinations of input circumstances
D. none of the above

ugcnetcse-dec2013-paper3 is&software-engineering software-testing

Answer key

## 27.48.10 Software Testing: UGC NET CSE | December 2015 | Part 2 | Question: 46 top

In software testing, how the error, fault and failure are related to each other?

A. Error leads to failure but fault is not related to error and failure
B. Fault leads to failure but error is not related to fault and failure
C. Error leads to fault and fault leads to failure
D. Fault leads to error and error leads to failure

ugcnetcse-dec2015-paper2 is&software-engineering software-testing

Answer key

## 27.48.11 Software Testing: UGC NET CSE | January 2017 | Part 3 | Question: 43 top

Which of the following statement(s) is/are TRUE with regard to software testing?

I. Regression testing technique ensures that the software product runs correctly after the changes during maintenance.
II. Equivalence partitioning is a white-box testing technique that divides the input domain of a program into classes of data from which test cases can be derived.

A. only I
B. only II
C. both I and II
D. neither I nor II

ugcnetcse-jan2017-paper3 is&software-engineering software-testing

Answer key

## 27.48.12 Software Testing: UGC NET CSE | January 2017 | Part 3 | Question: 44 top

Which of the following are facts about a top-down software testing approach?

I. Top-down testing typically requires the tester to build method stubs
II. Top-down testing typically requires the tester to build test drivers

A. Only I
B. Only II
C. Both I and II
D. Neither I nor II

ugcnetcse-jan2017-paper3 is&software-engineering software-testing

Answer key

## 27.48.13 Software Testing: UGC NET CSE | June 2012 | Part 3 | Question: 30 top

While unit testing a module, it is found that for a set of test data, maximum 90% of the code alone were tested with a probability of success 0.9. The reliability of the module is

A. at least greater than 0.9
B. equal to 0.9
C. at most 0.81
D. at least 1/0.81

ugcnetcse-june2012-paper3 is&software-engineering software-testing

Answer key

## 27.48.14 Software Testing: UGC NET CSE | June 2013 | Part 3 | Question: 4 top

Equivalence partitioning is a _____ method that divides the input domain of a program into classes of data from which test cases can be derived

A. White-box testing
B. Black-box testing
C. Orthogonal array testing
D. Stress testing

ugcnetcse-june2013-paper3 is&software-engineering software-testing non-gate

Answer key

## 27.48.15 Software Testing: UGC NET CSE | June 2014 | Part 2 | Question: 15 top

Regression testing is primarily related to

A. Functional testing
B. Development testing
C. Data flow testing
D. Maintenance testing

ugcnetcse-june2014-paper2 is&software-engineering software-testing

Answer key

## 27.48.16 Software Testing: UGC NET CSE | June 2014 | Part 3 | Question: 16 top

Software testing is

A. the process of establishing that errors are not present
B. the process of establishing confidence that a program does what it is supposed to do
C. the process of executing a program to show that it is working as per specifications
D. the process of executing a program with the intent of finding errors

ugcnetjune2014iii is&software-engineering software-testing

Answer key

### 27.48.17 Software Testing: UGC NET CSE | Junet 2015 | Part 2 | Question: 42 top

Which of the testing strategy requirements established during requirements analysis are validated against developed software?

A. validation testing
B. integration testing
C. regression testing
D. system testing

ugcnetcse-june2015-paper2 software-testing is&software-engineering

Answer key

### 27.48.18 Software Testing: UGC NET CSE | September 2013 | Part 2 | Question: 30 top

Equivalence partitioning is a _____ testing method that divides the input domain of a program into classes of data from which test cases can be derived.

A. White box
B. Black box
C. Regression
D. Smoke

ugcnetsep2013ii is&software-engineering software-testing

Answer key

### 27.48.19 Software Testing: UGC NET CSE | September 2013 | Part 3 | Question: 29 top

____ refers to the discrepancy among a computed, observed or measured value and the true specified or theoretically correct values?

A. Fault
B. Failure
C. Defect
D. Error

ugcnetcse-sep2013-paper3 is&software-engineering software-testing

Answer key

### 27.48.20 Software Testing: UGC NET CSE | September 2013 | Part 3 | Question: 43 top

Equivalence class partitioning approach is used to divide the input domain into a set of equivalence classes, so that if a program works correctly for all the other values in that class. This is used _____

A. to partition the program in the form of classes
B. to reduce the number of test cases required
C. for designing the test cases in the white box testing
D. all of the above

ugcnetcse-sep2013-paper3 is&software-engineering software-testing

Answer key

## 27.49 Software Validation (1) top

### 27.49.1 Software Validation: UGC NET CSE | December 2012 | Part 3 | Question: 65 top

_____ establishes information about when,why and by whom changes are made in a Software.

A. Software Configuration Management
B. Change Control
C. Version Control
D. An Audit Trail

ugcnetcse-dec2012-paper3 is&software-engineering software-validation

Answer key

## 27.50 Source Code Metric (1) top

### 27.50.1 Source Code Metric: UGC NET CSE | December 2014 | Part 3 | Question: 43 top

Which one of the following is not a source code metric ?

A. Halstead metric
B. Function point metric

C. Complexity metric
D. Length metric

ugcnetcse-dec2014-paper3 is&software-engineering source-code-metric

Answer key

## 27.51 Uml (1) top

### 27.51.1 Uml: UGC NET CSE | June 2013 | Part 3 | Question: 26 top

An actor in an animation is a small program invoked _____ per frame to determine the characteristics of some object in the animation.

A. once
B. twice
C. 30 times
D. 60 times

ugcnetcse-june2013-paper3 is&software-engineering uml

Answer key

## 27.52 Validation (1) top

### 27.52.1 Validation: UGC NET CSE | June 2019 | Part 2 | Question: 60 top

Software validation mainly checks for inconsistencies between

A. use cases and user requirements
B. implementation and system design blueprints
C. detailed specifications and user requirements
D. functional specifications and use cases

ugcnetcse-june2019-paper2 validation

Answer key

## 27.53 Waterfall Model (2) top

### 27.53.1 Waterfall Model: UGC NET CSE | August 2016 | Part 2 | Question: 42 top

The major shortcoming of waterfall model is

A. The difficulty in accommodating changes after requirement analysis.
B. The difficult in accommodating changes after feasibility analysis.
C. The system testing.
D. The maintenance of system.

ugcnetcse-aug2016-paper2 is&software-engineering waterfall-model

Answer key

### 27.53.2 Waterfall Model: UGC NET CSE | June 2016 | Part 2 | Question: 43 top

Which of the following is not included in the waterfall model?

A. Requirement analysis
B. Risk analysis
C. Design
D. Coding

ugcnetcse-june2016-paper2 waterfall-model

Answer key

## 27.54 White Box Testing (1) top

### 27.54.1 White Box Testing: UGC NET CSE | June 2019 | Part 2 | Question: 53 top

In the context of software testing, which of the following statements is/are NOT correct?

P: A minimal test set that achieves $100\%$ path coverage will also achieve $100\%$ statement coverage.

Q: A minimal test set that achieves $100\%$ path coverage will generally detect more faults than one that achieves $100\%$ statement coverage.

R: A minimal test set that achieves $100\%$ statement coverage will generally detect more faults than one that achieves $100\%$ branch coverage.

A. R only
B. Q only
C. P and Q only
D. Q and R only

ugcnetcse-june2019-paper2 white-box-testing statement-coverage-branch-coverage-path-coverage

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 27.0.1 | Q-Q | 27.0.2 | Q-Q | 27.0.3 | Q-Q | 27.0.4 | Q-Q | 27.0.5 | Q-Q |
| 27.0.6 | Q-Q | 27.0.7 | Q-Q | 27.0.8 | Q-Q | 27.0.9 | Q-Q | 27.0.10 | Q-Q |
| 27.0.11 | Q-Q | 27.0.12 | Q-Q | 27.0.13 | Q-Q | 27.0.14 | Q-Q | 27.0.15 | Q-Q |
| 27.0.16 | Q-Q | 27.0.17 | Q-Q | 27.0.18 | Q-Q | 27.0.19 | Q-Q | 27.0.20 | Q-Q |
| 27.0.21 | Q-Q | 27.0.22 | Q-Q | 27.1.1 | B | 27.2.1 | C | 27.2.2 | B |
| 27.3.1 | B | 27.4.1 | C | 27.4.2 | C | 27.4.3 | B | 27.5.1 | Q-Q |
| 27.6.1 | Q-Q | 27.6.2 | Q-Q | 27.6.3 | B | 27.7.1 | B | 27.8.1 | D |
| 27.8.2 | C | 27.9.1 | Q-Q | 27.9.2 | A | 27.10.1 | B | 27.10.2 | Q-Q |
| 27.10.3 | B | 27.11.1 | B | 27.12.1 | C | 27.13.1 | D | 27.13.2 | A |
| 27.14.1 | C | 27.14.2 | C | 27.15.1 | B | 27.16.1 | A | 27.17.1 | Q-Q |
| 27.18.1 | B | 27.18.2 | C | 27.19.1 | C | 27.20.1 | B | 27.21.1 | Q-Q |
| 27.21.2 | Q-Q | 27.21.3 | Q-Q | 27.21.4 | Q-Q | 27.21.5 | A | 27.21.6 | C |
| 27.21.7 | B | 27.21.8 | C | 27.21.9 | D | 27.21.10 | C | 27.21.11 | D |
| 27.21.12 | D | 27.21.13 | A | 27.21.14 | A | 27.21.15 | C | 27.21.16 | D |
| 27.21.17 | B | 27.21.18 | B | 27.21.19 | B | 27.21.20 | D | 27.21.21 | D |
| 27.21.22 | Q-Q | 27.21.23 | Q-Q | 27.21.24 | Q-Q | 27.21.25 | Q-Q | 27.21.26 | Q-Q |
| 27.21.27 | Q-Q | 27.21.28 | Q-Q | 27.21.29 | D | 27.21.30 | C | 27.21.31 | B |
| 27.21.32 | C | 27.21.33 | B | 27.21.34 | B | 27.21.35 | B | 27.21.36 | B |
| 27.21.37 | B | 27.21.38 | A | 27.21.39 | C | 27.21.40 | B | 27.21.41 | A |
| 27.21.42 | C | 27.21.43 | B | 27.21.44 | B | 27.21.45 | B | 27.21.46 | B |
| 27.21.47 | B | 27.21.48 | B | 27.21.49 | C | 27.21.50 | C | 27.21.51 | B |
| 27.21.52 | C | 27.21.53 | C | 27.21.54 | A | 27.21.55 | B | 27.21.56 | C |
| 27.21.57 | D | 27.21.58 | A | 27.21.59 | C | 27.22.1 | A | 27.23.1 | B |
| 27.24.1 | C | 27.25.1 | A | 27.26.1 | B | 27.27.1 | C | 27.28.1 | D |
| 27.29.1 | B | 27.29.2 | D | 27.29.3 | B | 27.30.1 | D | 27.31.1 | B |
| 27.32.1 | B | 27.33.1 | D | 27.34.1 | Q-Q | 27.34.2 | Q-Q | 27.34.3 | B |
| 27.34.4 | Q-Q | 27.34.5 | Q-Q | 27.34.6 | Q-Q | 27.34.7 | A | 27.34.8 | X |
| 27.34.9 | C | 27.34.10 | B | 27.34.11 | C | 27.34.12 | C | 27.34.13 | D |
| 27.34.14 | A | 27.35.1 | Q-Q | 27.35.2 | Q-Q | 27.35.3 | C | 27.36.1 | Q-Q |
| 27.36.2 | Q-Q | 27.36.3 | Q-Q | 27.36.4 | Q-Q | 27.36.5 | Q-Q | 27.36.6 | C |
| 27.36.7 | D | 27.36.8 | D | 27.36.9 | C | 27.36.10 | D | 27.36.11 | A |
| 27.37.1 | Q-Q | 27.38.1 | D | 27.39.1 | B | 27.39.2 | B | 27.40.1 | D |
| 27.40.2 | B | 27.40.3 | C | 27.41.1 | B | 27.42.1 | Q-Q | 27.42.2 | D |
| 27.43.1 | D | 27.44.1 | Q-Q | 27.44.2 | Q-Q | 27.44.3 | C | 27.44.4 | D |
| 27.44.5 | B | 27.44.6 | B | 27.44.7 | C | 27.44.8 | C | 27.45.1 | D |
| 27.46.1 | Q-Q | 27.47.1 | B | 27.48.1 | Q-Q | 27.48.2 | Q-Q | 27.48.3 | B |

| | |
|---|---|
| 27.48.4 | Q-Q |
| 27.48.9 | B |
| 27.48.14 | B |
| 27.48.19 | D |
| 27.52.1 | C |

| | |
|---|---|
| 27.48.5 | Q-Q |
| 27.48.10 | C |
| 27.48.15 | D |
| 27.48.20 | B |
| 27.53.1 | Q-Q |

| | |
|---|---|
| 27.48.6 | Q-Q |
| 27.48.11 | A |
| 27.48.16 | D |
| 27.49.1 | D |
| 27.53.2 | B |

| | |
|---|---|
| 27.48.7 | Q-Q |
| 27.48.12 | A |
| 27.48.17 | A |
| 27.50.1 | B |
| 27.54.1 | A |

| | |
|---|---|
| 27.48.8 | B |
| 27.48.13 | C |
| 27.48.18 | B |
| 27.51.1 | A |

# 28 Non GATE: Java (10)

## 28.1 Abstract Method (1) top

### 28.1.1 Abstract Method: UGC NET CSE | August 2016 | Part 3 | Question: 40 top

Which of the following is not a correct statement ?

A. Every class containing abstract method must be declared abstract.
B. Abstract class can directly be initiated with 'new' operator.
C. Abstract class can be initiated.
D. Abstract class does not contain any definition of implementation.

ugcnetcse-aug2016-paper3 java abstract-method

Answer key

## 28.2 Applet (1) top

### 28.2.1 Applet: UGC NET CSE | December 2014 | Part 3 | Question: 42 top

Which method is called first by an applet program ?

A. start( ) B. run( ) C. init( ) D. begin( )

ugcnetcse-dec2014-paper3 java applet

Answer key

## 28.3 Java (3) top

### 28.3.1 Java: UGC NET CSE | August 2016 | Part 3 | Question: 42 top

Java uses threads to enable the entire environment to be _____.

A. Symmetric B. Asymmetric C. Synchronous D. Asynchronous

ugcnetcse-aug2016-paper3 java threads

Answer key

### 28.3.2 Java: UGC NET CSE | July 2018 | Part 2 | Question: 3 top

What is the output of the following JAVA program?

```
class simple
{
   public static void main(String[ ] args)
   {
      simple obj = new simple();
      obj.start();
   }
   void start()
   {
      long [] P = {3, 4, 5};
      long [] Q = method (P);
      System.out.print (P[0] + P[1] +P[2]+":");
      System.out.print (Q[0] + Q[1] + Q[2]);
   }
   long [ ] method (long [ ] R)
   {
      R[1] = 7;
      return R;
   }
} //end of class
```

A. 12:15 B. 15:12 C. 12:12 D. 15:15

ugcnetcse-july2018-paper2 java

Answer key

### 28.3.3 Java: UGC NET CSE | June 2019 | Part 2 | Question: 23 top

What is the output of the following JAVA program?

```
public class Good {
  private int m;
  public Good (int m){this.m=m;}
  public Boolean equals (Good n) {return n.m==m;}
  public static void main (string args[]){
    Good m1 = new Good(22);
    Good m2 = new Good(22);
    Object s1 = new Good(22);
    Object s2 = new Good(22);
    System.out.println(m1.equals(m2));
    System.out.println(s1.equals(s2));
    System.out.println(m1.equals(s2));
    System.out.println(s1.equals(m2));
  }
}
```

A. True, True, False, False
B. True, False, True, False
C. True, True, False, True
D. True, False, False, False

ugcnetcse-june2019-paper2 java

Answer key

## 28.4 Method Overriding (1) top

### 28.4.1 Method Overriding: UGC NET CSE | August 2016 | Part 3 | Question: 38 top

Method over-riding can be prevented by using final as a modifier at _____.

A. The start of the class.
B. The start of method declaration.
C. The start of derived class.
D. The start of the method declaration in the derived class.

ugcnetcse-aug2016-paper3 java method-overriding

Answer key

## 28.5 Multi Threaded Programming (1) top

### 28.5.1 Multi Threaded Programming: UGC NET CSE | December 2014 | Part 3 | Question: 37 top

Which methods are utilized to control the access to an object in multi-threaded programming ?

A. Asynchronized methods
B. Synchronized methods
C. Serialized methods
D. None of the above

ugcnetcse-dec2014-paper3 java multi-threaded-programming

Answer key

## 28.6 Oops (1) top

### 28.6.1 Oops: UGC NET CSE | June 2016 | Part 3 | Question: 40 top

Which of the following statements is correct?

A. Every class containing abstract method must not be declared abstract
B. Abstract class cannot be directly initiated with new operator
C. Abstract class cannot be initiated
D. Abstract class contains definition of implementations

ugcnetcse-june2016-paper3 oops java

Answer key

## 28.7 Servlet (1) top

### 28.7.1 Servlet: UGC NET CSE | June 2014 | Part 3 | Question: 52 top

Match the following interfaces of Java. Servlet package :

| | List – I | | List – II |
|---|---|---|---|
| a. | Servlet config | i | Enables Servlets to log events |
| b. | Servlet Context | ii. | Read data from a client |
| c. | Servlet Request | iii. | Write data to a client |
| d. | Servlet Response | iv. | To get initialization parameters |

**Codes :**

A. a-iii, b-iv, c-ii, d-i
B. a-iii, b-ii, c-iv, d-i
C. a-ii, b-iii, c-iv, d-i
D. a-iv, b-i, c-ii, d-iii

ugcnetjune2014iii java servlet

Answer key

## 28.8 Wrapper Class Object (1) top

### 28.8.1 Wrapper Class Object: UGC NET CSE | December 2014 | Part 3 | Question: 39 top

Converting a primitive type data into its corresponding wrapper class object instance is called

A. Boxing
B. Wrapping
C. Instantiation
D. Autoboxing

ugcnetcse-dec2014-paper3 java wrapper-class-object

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 28.1.1 | Q-Q | 28.2.1 | C | 28.3.1 | Q-Q | 28.3.2 | Q-Q | 28.3.3 | X |
| 28.4.1 | Q-Q | 28.5.1 | B | 28.6.1 | B;C | 28.7.1 | D | 28.8.1 | D |

# 29 Non GATE: Numerical Methods (3)

## 29.1 Hungarian Method (1) top

### 29.1.1 Hungarian Method: UGC NET CSE | December 2014 | Part 3 | Question: 69 top

Five men are available to do five different jobs. From past records, the time (in hours) that each man takes to do each job is known and is given in the following table :

| | | Jobs | | | | |
|---|---|---|---|---|---|---|
| | | I | II | III | IV | V |
| | P | 2 | 9 | 2 | 7 | 1 |
| | Q | 6 | 8 | 7 | 6 | 1 |
| Men | R | 4 | 6 | 5 | 3 | 1 |
| | S | 4 | 2 | 7 | 3 | 1 |
| | T | 5 | 3 | 9 | 5 | 1 |

Find out the minimum time required to complete all the jobs.

A. $5$ B. $11$ C. $13$ D. $15$

ugcnetcse-dec2014-paper3 assignment-problem hungarian-method

Answer key

## 29.2 Operation Research Pert Cpm (1) top

### 29.2.1 Operation Research Pert Cpm: UGC NET CSE | December 2018 | Part 2 | Question: 8 top

In PERT/CPM, the merge event represents _____ of two or more events.

A. completion B. beginning C. splitting D. joining

ugcnetcse-dec2018-paper2 operation-research-pert-cpm

Answer key

## 29.3 Simplex Method (1) top

### 29.3.1 Simplex Method: UGC NET CSE | June 2019 | Part 2 | Question: 10 top

Consider an LPP given as

$\text{Max } Z = 2x_1 - x_2 + 2x_3$

subject to the constraints

$$2x_1 + x_2 \leq 10$$
$$x_1 + 2x_2 - 2x_3 \leq 20$$
$$x_1 + 2x_3 \leq 5$$
$$x_1,\ x_2\ x_3 \geq 0$$

What shall be the solution of the LLP after applying first iteration of the Simplex Method?

A. $x_1 = \frac{5}{2},\ x_2 = 0,\ x_3 = 0,\ Z = 5$
B. $x_1 = 0, x_2 = 0,\ x_3 = \frac{5}{2},\ Z = 5$
C. $x_1 = 0, x_2 = \frac{5}{2},\ x_3 = 0,\ Z = -\frac{5}{2}$
D. $x_1 = 0, x_2 = 0,\ x_3 = 10,\ Z = 20$

ugcnetcse-june2019-paper2 simplex-method

Answer key

# Answer Keys

| | | | | | |
|---|---|---|---|---|---|
| 29.1.1 | C | 29.2.1 | Q-Q | 29.3.1 | B |

## 30 Non GATE: Object Oriented Programming (58)

### 30.0.1 UGC NET CSE | December 2007 | Part 2 | Question: 15 top

Which of the following is true of constructor function in C++ ?

A. A class must have at least one constructor.
B. A constructor is a unique function which cannot be overloaded.
C. A constructor function must be invoked with the object name.
D. A constructor function is automatically invoked when an object is created.

ugcnetcse-dec2007-paper2

Answer key

### 30.0.2 UGC NET CSE | December 2007 | Part 2 | Question: 14 top

Which of the following is not true in C++ ?

A. “Private” elements of a base class are not accessible by members of its derived class.
B. “Protected” elements of base class are not accessible by members of its derived class.
C. When base class access specified is “Public”, public elements of the base class become public members of its derived class.
D. When base class access specified is “Public”, protected elements of a base class become protected members of its derived class.

ugcnetcse-dec2007-paper2

Answer key

### 30.0.3 UGC NET CSE | December 2004 | Part 2 | Question: 15 top

Polymorphism means :

A. A template function
B. Runtime type identification within a class hierarchy
C. Another name for operator overloading
D. Virtual inheritance

ugcnetcse-dec2004-paper2

Answer key

## 30.1 Abstract Class (2) top

### 30.1.1 Abstract Class: UGC NET CSE | December 2015 | Part 3 | Question: 29 top

Which of the following is used to make an Abstract class?

A. Making at least one member function as pure virtual function
B. Making at least one member function as virtual function
C. Declaring as Abstract class using virtual keyword
D. Declaring as Abstract class using static keyword

ugcnetcse-dec2015-paper3 object-oriented-programming abstract-class

Answer key

### 30.1.2 Abstract Class: UGC NET CSE | December 2015 | Part 3 | Question: 36 top

Which of the following is/are correct with reference to Abstract class and interface?

a. A class can inherit only one Abstract class but may inherit several interfaces
b. An abstract class can provide complete and default code but an interface has no code

A. a is true
B. b is true

C. Both a and b are true D. Neitehr a nor b are true

ugcnetcse-dec2015-paper3 object-oriented-programming abstract-class

Answer key

## 30.2 C++ (2) top

### 30.2.1 C++: UGC NET CSE | August 2016 | Part 2 | Question: 15 top

A function template in C++ provides _____ level of generalization.

A. $4$ B. $3$ C. $2$ D. $1$

ugcnetcse-aug2016-paper2 object-oriented-programming c++ function

Answer key

### 30.2.2 C++: UGC NET CSE | December 2014 | Part 2 | Question: 13 top

Which of the following is not a member of class ?

A. Static function
B. Friend function
C. Const function
D. Virtual function

ugcnetcse-dec2014-paper2 object-oriented-programming c++

Answer key

## 30.3 Composition (1) top

### 30.3.1 Composition: UGC NET CSE | August 2016 | Part 3 | Question: 39 top

Which of the following is a correct statement ?

A. Composition is a strong type of association between two classes with full ownership.
B. Composition is a strong type of association between two classes with partial ownership.
C. Composition is a weak type of association between two classes with partial ownership.
D. Composition is a weak type of association between two classes with strong ownership.

ugcnetcse-aug2016-paper3 object-oriented-programming composition

Answer key

## 30.4 Constructor (3) top

### 30.4.1 Constructor: UGC NET CSE | August 2016 | Part 3 | Question: 37 top

Constructors have _____ return type.

A. void B. char C. int D. no

ugcnetcse-aug2016-paper3 object-oriented-programming constructor

Answer key

### 30.4.2 Constructor: UGC NET CSE | December 2008 | Part 2 | Question: 27 top

A copy constructor is invoked when :

A. a function returns by value
B. an argument is passed by value
C. a function returns by reference
D. none of the above

ugcnetcse-dec2008-paper2 object-oriented-programming constructor

Answer key

### 30.4.3 Constructor: UGC NET CSE | December 2008 | Part 2 | Question: 29 top

How many constructors can a class have ?

A. zero
B. 1
C. 2
D. any number

ugcnetcse-dec2008-paper2 object-oriented-programming constructor

Answer key

## 30.5 Cpp (1) top

### 30.5.1 Cpp: UGC NET CSE | June 2008 | Part 2 | Question: 15 top

**Which of the following is true?**

**(A) A "static" member of a class cannot be inherited by its derived class.**

**(B) A "static" member of a class can be initialized only within the class it is a member of.**

**(C) A "static" member of a class can be initialized before an object of that class is created.**

**(D) Since "static" member of a class is actually a global element, it does not require a class/object qualifier to access it independently of class/object.**

ugcnetcse-june2008-paper2 non-gate cpp object-oriented-programming

Answer key

## 30.6 Final (1) top

### 30.6.1 Final: UGC NET CSE | July 2018 | Part 2 | Question: 6 top

In Java, which of the following statements is/are TRUE?

S1: The 'final' keyword applied to a class definition prevents the class form being extended through derivation

S2: A class can only inherit one class but can implement multiple interfaces

S3: Java permits a class to replace the implementation of a method that it has inherited. It is called method overloading

**Code:**

A. S1 and S2 only B. S1 and S3 only C. S2 and S3 only D. All of S1, S2 and S3

ugcnetcse-july2018-paper2 object-oriented-programming java final

Answer key

## 30.7 Friend Class (1) top

### 30.7.1 Friend Class: UGC NET CSE | June 2016 | Part 2 | Question: 13 top

Which one of the following is correct, when a class grants friend status to another class?

A. The member functions of the class generating friendship can access teh members of the friend class
B. All member functions of the class granted friendship have unrestricted access to the members of the class granting the friendship
C. Class friendship is reciprocal to each other
D. There is no such concept

ugcnetcse-june2016-paper2 object-oriented-programming friend-class

Answer key

## 30.8 Friend Function (2) top

### 30.8.1 Friend Function: UGC NET CSE | August 2016 | Part 2 | Question: 13 top

If a function is friend of a class, which one of the following is wrong ?

A. A function can only be declared a friend by a class itself.
B. Friend functions are not members of a class, they are associated with it.
C. Friend functions are members of a class.
D. It can have access to all members of the class, even private ones.

ugcnetcse-aug2016-paper2 object-oriented-programming friend-function c++

Answer key

### 30.8.2 Friend Function: UGC NET CSE | June 2014 | Part 2 | Question: 44 top

A friend function can be used to

A. Avoid arguments between classes.
B. Allow access to classes whose source code is unavailable.
C. Allow one class to access an unrelated class.
D. None of the above

ugcnetcse-june2014-paper2 object-oriented-programming friend-function

Answer key

## 30.9 Inheritance (3) top

### 30.9.1 Inheritance: UGC NET CSE | December 2013 | Part 2 | Question: 19 top

_____ allows to create classes which are derived from other classes, so that they automatically include some of its "parent's" members, plus its own members.

A. Overloading B. Inheritance C. Polymorphism D. Encapsulation

ugcnetcse-dec2013-paper2 inheritance

Answer key

### 30.9.2 Inheritance: UGC NET CSE | Junet 2015 | Part 2 | Question: 12 top

Which of the following, in C++, is inherited in a derived class from base class?

A. constructor B. destructor C. data members D. virtual methods

ugcnetcse-june2015-paper2 oops inheritance

Answer key

### 30.9.3 Inheritance: UGC NET CSE | Junet 2015 | Part 2 | Question: 15 top

When the inheritance is private, the private methods in base class are _____ in the derived class (in C++)

A. inaccessible B. accessible C. protected D. public

ugcnetcse-june2015-paper2 oops inheritance

Answer key

## 30.10 Java (10) top

### 30.10.1 Java: UGC NET CSE | December 2012 | Part 3 | Question: 69 top

Which is the method used to retrieve the current state of a check box?

A. get State ( )
B. put State ( )
C. retrieve State ( )
D. write State ( )

ugcnetcse-dec2012-paper3 object-oriented-programming java

Answer key

## 30.10.2 Java: UGC NET CSE | January 2017 | Part 3 | Question: 38 top

Given the array of integers 'array' shown below:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 13 | 7 | 27 | 2 | 18 | 33 | 9 | 11 | 22 | 8 |

What is the output of the following JAVA statements?

```
int[] p = new int [10];
int[] q = new int [10];
for (int k=0; k< 10; k++)
   p[k]=array [k];
q=p;
p[4]=20;
System.out.println(array[4]+":"+q[4]);
```

A. 20:20 B. 18:18 C. 18:20 D. 20:18

ugcnetcse-jan2017-paper3 object-oriented-programming java

Answer key

## 30.10.3 Java: UGC NET CSE | January 2017 | Part 3 | Question: 39 top

Consider the following JAVA program:

```
public class First {
   public static int CBSE (int x) {
         if (x < 100)x = CBSE (x+10);
         return (x-1);
        }
    public static void main(String[]args){
         System.out.print(First.CBSE(60));
    }
}
```

What does this program print?

A. 59
B. 95
C. 69
D. 99

ugcnetcse-jan2017-paper3 object-oriented-programming java

Answer key

## 30.10.4 Java: UGC NET CSE | January 2017 | Part 3 | Question: 40 top

Which of the following statement(s) with regard to an abstract class in JAVA is /are TRUE ?

I. An abstract class is one that is not used to create objects
II. An abstract class is designed only to act as a base class to be inherited by other classes

A. Only I
B. only II
C. Neither I nor II
D. Both I and II

ugcnetcse-jan2017-paper3 object-oriented-programming java

Answer key

## 30.10.5 Java: UGC NET CSE | June 2012 | Part 3 | Question: 70, UGCNET-Sep2013-III: 52 top

Assume that we have constructor functions for both base class and derived class. Now consider the declaration in

main()

Base *P=New Derived;

In what sequence will the constructor be called?

A. Derived class constructor followed by Base class constructor
B. Base class constructor followed by Derived class constructor
C. Base class constructor will not be called
D. Derived class constructor will not be called

ugcnetcse-june2012-paper3 ugcnetcse-sep2013-paper3 object-oriented-programming java programming-in-c

Answer key

### 30.10.6 Java: UGC NET CSE | June 2016 | Part 3 | Question: 38 top

It is possible to define a class within a class termed as nested class. There are __ types of nested classes

A. 2 B. 3 C. 4 D. 5

ugcnetcse-june2016-paper3 object-oriented-programming java

Answer key

### 30.10.7 Java: UGC NET CSE | June 2016 | Part 3 | Question: 42 top

When one object reference variable is assigned to another object reference variable then

A. a copy of the object is created
B. a copy of the reference is created
C. a copy of the reference is not created
D. It is illegal to assign one object reference variable to another object reference variable

ugcnetcse-june2016-paper3 object-oriented-programming java

Answer key

### 30.10.8 Java: UGC NET CSE | Junet 2015 | Part 3 | Question: 37 top

In Java, when we implement an interface method, it must be declared as

A. Private B. Protected C. Public D. Friend

ugcnetcse-june2015-paper3 object-oriented-programming java

Answer key

### 30.10.9 Java: UGC NET CSE | Junet 2015 | Part 3 | Question: 38 top

The Servlet Response interface enables a servlet to formulate a response for a client using the method

A. void log(Exception e, String s)
B. void destroy()
C. int get ServerPort()
D. void set ContextType(String Type)

ugcnetcse-june2015-paper3 object-oriented-programming java

Answer key

### 30.10.10 Java: UGC NET CSE | Junet 2015 | Part 3 | Question: 39 top

Which one of the following is correct?

A. Java applets cannot be written in any programming language
B. An applet is not a small program
C. An applet can be run on its own
D. Applets are embedded in another applications

ugcnetcse-june2015-paper3 object-oriented-programming java

Answer key

## 30.11 Object Oriented Programming (24) top

### 30.11.1 Object Oriented Programming: UGC NET CSE | December 2008 | Part 2 | Question: 28 top

When a language has the capability to produce new data types, it is said to be :

A. extensible
B. encapsulated
C. overloaded

D. none of the above

ugcnetcse-dec2008-paper2 object-oriented-programming

## 30.11.2 Object Oriented Programming: UGC NET CSE | December 2012 | Part 3 | Question: 48 top

Functions defined with class name are called as

A. Inline Function
B. Friend Function
C. Constructor
D. Static Function

ugcnetcse-dec2012-paper3 object-oriented-programming functions

Answer key

## 30.11.3 Object Oriented Programming: UGC NET CSE | December 2013 | Part 3 | Question: 10 top

Match the following with respect to relationship objects and classes :

| | List – I | | List – II |
|---|---|---|---|
| a. | State diagram | i. | Useful for both abstract modelling and for designing actual program |
| b. | Object diagram | ii. | Describe object classes |
| c. | Class diagram | iii. | Useful for documenting test cases |
| d. | Instance diagram | iv. | Describing the behaviour of a single class of the obeiects |

**Codes :**

A. a-iv, b-i, c-ii, d-iii
B. a-ii, b-iii, c-iv, d-i
C. a-iii, b-iv, c-ii, d-i
D. a-ii, b-iv, c-i, d-iii

ugcnetcse-dec2013-paper3 object-oriented-programming

Answer key

## 30.11.4 Object Oriented Programming: UGC NET CSE | December 2013 | Part 3 | Question: 11 top

Match the following style rules for reusability :

| | List – I | | List – II |
|---|---|---|---|
| a. | Keep methods coherent | i. | Write a method to get the last element of a list |
| b. | Keep methods small | ii. | Maintain a parallel structure when possible |
| c. | Keep methods consistent | iii. | Breaking a method into smaller parts |
| d. | Provide uniform coverage | iv. | Performs a single function or a group of a closely related functions |

**Codes :**

A. a-iv, b-iii, c-ii, d-i
B. a-ii, b-i, c-iv, d-iii
C. a-iii, b-iv, c-ii, d-i
D. a-ii, b-iii, c-iv, d-i

ugcnetcse-dec2013-paper3 object-oriented-programming

Answer key

## 30.11.5 Object Oriented Programming: UGC NET CSE | December 2013 | Part 3 | Question: 18 top

C++ actually supports the following two complete dynamic systems:

A. One defined by C++ and the other not defined by C
B. One defined by C and one specific to C++
C. Both are specific to C++
D. Both of them are improvements of C

ugcnetcse-dec2013-paper3 object-oriented-programming

Answer key

## 30.11.6 Object Oriented Programming: UGC NET CSE | December 2013 | Part 3 | Question: 19 top

Important advantage of using new and delete operators in C++ is

A. Allocation of memory
B. Frees the memory previously allocated
C. Initialization of memory easily
D. Allocation of memory and frees the memory previously allocated

ugcnetcse-dec2013-paper3 object-oriented-programming

Answer key

## 30.11.7 Object Oriented Programming: UGC NET CSE | December 2014 | Part 2 | Question: 15 top

Which of the following differentiates between overloaded functions and overridden functions ?

A. Overloading is a dynamic or runtime binding and overridden is a static or compile time binding.
B. Overloading is a static or compile time binding and overriding is dynamic or runtime binding.
C. Redefining a function in a friend class is called overloading, while redefining a function in a derived class is called as overridden function.
D. Redefining a function in a derived class is called function overloading, while redefining a function in a friend class is called function overriding.

ugcnetcse-dec2014-paper2 object-oriented-programming

Answer key

## 30.11.8 Object Oriented Programming: UGC NET CSE | December 2015 | Part 2 | Question: 12 top

Consider the following two statements:

a. A publicly derived class is a subtype of its base class
b. Inheritance provides for code resuse

Which of the following statements is correct?

A. Both statements a and b are correct
B. Neither of the statements a and b are correct
C. Statement a is correct and b is incorrect
D. Statement a is incorrect and b is correct

ugcnetcse-dec2015-paper2 object-oriented-programming

Answer key

## 30.11.9 Object Oriented Programming: UGC NET CSE | December 2015 | Part 3 | Question: 30 top

Match the following with reference to object oriented modelling :

| | List-I | | List-II |
|---|---|---|---|
| (a) | Polymorphism | (i) | Picking both operator and attributes with operations appropriate to model an object |
| (b) | Inheritance | (ii) | Hiding implementation details of methods from users of objects |
| (c) | Encapsulation | (iii) | Using similar operations to do similar things |
| (d) | Abstraction | (iv) | Create new classes from existing class |

**Codes:**

A. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)
B. (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)
C. (a)-(iii), (b)-(i), (c)-(ii), (d)-(iv)
D. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

ugcnetcse-dec2015-paper3 object-oriented-programming

Answer key

## 30.11.10 Object Oriented Programming: UGC NET CSE | January 2017 | Part 2 | Question: 11 top

Which of the following cannot be passed to a function in C++?

A. Constant B. Structure C. Array D. Header file

ugcnetjan2017ii object-oriented-programming functions

Answer key

## 30.11.11 Object Oriented Programming: UGC NET CSE | January 2017 | Part 2 | Question: 12 top

Which one of the following is correct for overloaded functions in $C++$?

A. Compiler sets up a separate function for every definition of function.
B. Compiler does not set up a separate function for every definition of function.
C. Overloaded functions cannot handle different types of objects.
D. Overloaded functions cannot have same number of arguments.

ugcnetjan2017ii object-oriented-programming functions

Answer key

## 30.11.12 Object Oriented Programming: UGC NET CSE | January 2017 | Part 2 | Question: 14 top

Which of the following operators cannot be overloaded in $C/C++$ ?

A. Bitwise right shift assignment
B. Address of
C. Indirection
D. Structure reference

ugcnetjan2017ii object-oriented-programming

Answer key

## 30.11.13 Object Oriented Programming: UGC NET CSE | January 2017 | Part 3 | Question: 37 top

Abstraction and encapsulation are fundamental principles that underlie the object oriented approach to software development. What can you say about the following two statements?

I. Abstraction allows us to focus on what something does without considering the complexities of how it works.
II. Encapsulation allows us to consider complex ideas while ignoring irrelevant detail that would confuse us.

A. Neither I nor II is correct
B. Both I and II are correct
C. Only II is correct
D. Only I is correct

ugcnetcse-jan2017-paper3 object-oriented-programming

Answer key

## 30.11.14 Object Oriented Programming: UGC NET CSE | July 2018 | Part 2 | Question: 5 top

Given below are three implementations of the $\text{swap}()$ function in $C++$ :

| (a) | (b) | (c) |
|---|---|---|
| void swap (int a, int b)<br>{<br>int temp;<br>temp = a;<br>a = b;<br>b = temp;<br>}<br>int main()<br>int p = 0,q = 1;<br>swap(p,q);<br>} | void swap (int &a, int &b)<br>{<br>int temp;<br>temp = a;<br>a = b;<br>b = temp;<br>}<br>int main()<br>int p = 0, int q = 1;<br>swap(p,q);<br>} | void swap (int *a, int *b)<br>{<br>int *temp;<br>temp = a;<br>a = b;<br>b = temp;<br>}<br>int main()<br>int p = 0 , q = 1;<br>swap(p,q);<br>} |

Which of these would actually swap the contents of the two integer variables $p$ and $q$?

A. $(a)$ only
B. $(b)$ only
C. $(c)$ only
D. $(b)$ and $(c)$ only

ugcnetcse-july2018-paper2 object-oriented-programming

Answer key

## 30.11.15 Object Oriented Programming: UGC NET CSE | June 2010 | Part 2 | Question: 13 top

Member of a class specified as _____ are accessible only to method of the class.

A. Private B. Public C. Protected D. Derive

ugcnetcse-june2010-paper2 object-oriented-programming

Answer key

## 30.11.16 Object Oriented Programming: UGC NET CSE | June 2010 | Part 2 | Question: 14 top

Match the following :

| | | | |
|---|---|---|---|
| (a) | Garbage collection in | 1. | Java |
| (b) | Nameless Object | 2. | generic programming |
| (c) | Template support | 3. | defines a class |
| (d) | A forward reference | 4. | member function |
| (e) | Derived class inherits from base class | 5 | within a statement |

**Codes :**

A. (a)-1, (b)-5, (c)-4, (d)-2, (e)-3
B. (a)-1, (b)-5, (c)-2, (d)-3, (e)-4
C. (a)-5, (b)-1, (c)-2, (d)-4, (e)-4
D. (a)-5, (b)-4, (c)-3, (d)-1, (e)-2

ugcnetcse-june2010-paper2 object-oriented-programming

Answer key

## 30.11.17 Object Oriented Programming: UGC NET CSE | June 2014 | Part 3 | Question: 12 top

The control string in $C++$ consists of three important classifications of characters

A. Escape sequence characters, Format specifiers and Whitespace characters
B. Special characters, White-space characters and Non-white space characters
C. Format specifiers, White-space characters and Non-white space characters
D. Special characters, White-space characters and Format specifiers

ugcnetjune2014iii object-oriented-programming

Answer key

## 30.11.18 Object Oriented Programming: UGC NET CSE | June 2014 | Part 3 | Question: 13 top

Match the following with respect to I/O classes in object oriented programming :

| | **List – I** | | **List – II** |
|---|---|---|---|
| a. | fopen() | i. | returns end of file |
| b. | fclose() | ii. | return for any problem report |
| c. | ferror() | iii. | return 0 |
| d. | feof() | iv. | returns a file pointer |

**Codes :**

A. a-iv, b-i, c-ii, d-iii
B. a-iii, b-i, c-iv, d-ii
C. a-ii, b-iii, c-iv, d-i
D. a-iv, b-iii, c-i, d-ii

ugcnetjune2014iii object-oriented-programming programming-in-c

Answer key

## 30.11.19 Object Oriented Programming: UGC NET CSE | June 2014 | Part 3 | Question: 49 top

Superficially the term “objectoriented”, means that, we organize software as a

A. collection of continuous objects that incorporates both data structure and behaviour.
B. collection of discrete objects that incorporates both discrete structure and behaviour.
C. collection of discrete objects that incorporates both data structure and behaviour.
D. collection of objects that incorporates both discrete data structure and behaviour.

ugcnetjune2014iii object-oriented-programming

Answer key

## 30.11.20 Object Oriented Programming: UGC NET CSE | June 2014 | Part 3 | Question: 50 top

The "part-whole”or "a-part-of", relationship in which objects representing the components of something associated with an object representing the entire assembly is called as

A. Association
B. Aggregation
C. Encapsulation
D. Generalisation

ugcnetjune2014iii object-oriented-programming

## 30.11.21 Object Oriented Programming: UGC NET CSE | June 2014 | Part 3 | Question: 51 top

The pure object oriented programming language with extensive metadata available and modifiable at run time is

A. Small talk
B. C++
C. Java
D. Eiffel

ugcnetjune2014iii object-oriented-programming

Answer key

## 30.11.22 Object Oriented Programming: UGC NET CSE | June 2016 | Part 2 | Question: 14 top

When a method in subclass has the same name and type signatures as a method in the superclass, then the method in the subclass ____ the method in the superclass.

A. Overloads
B. Friendhips
C. Inherits
D. Overrides

ugcnetcse-june2016-paper2 object-oriented-programming

Answer key

## 30.11.23 Object Oriented Programming: UGC NET CSE | June 2016 | Part 3 | Question: 37 top

Implicit return type of a class constructor is

A. not of class type itself
B. class type itself
C. a destructor of class type
D. a destructor not of class type

ugcnetcse-june2016-paper3 object-oriented-programming non-gate

Answer key

## 30.11.24 Object Oriented Programming: UGC NET CSE | October 2020 | Part 2 | Question: 12 top

Consider the following recursive Java function $f$ that takes two long arguments and returns a float value:

```
public static float f (long m, long n) {
float result = (float)m / (float)n;
if (m < 0 || n<0) return 0.0f;
else result -=f(m*2, n*3);
return result;
}
```

Which of the following real values best approximates the value of $f(1,3)$?

A. $0.2$
B. $0.4$
C. $0.6$
D. $0.8$

ugcnetcse-oct2020-paper2 non-gate object-oriented-programming

## 30.12 Operator Overloading (1) top

### 30.12.1 Operator Overloading: UGC NET CSE | December 2013 | Part 2 | Question: 18 top

Which of the following operators cannot be overloaded in C++?

A. *
B. +=
C. ==
D. : :

ugcnetcse-dec2013-paper2 programming-in-c operator-overloading

Answer key

## 30.13 Programming In C (1) top

### 30.13.1 Programming In C: UGC NET CSE | June 2019 | Part 2 | Question: 24 top

Consider the following C++ function f():

```
unsigned int f(unsigned int n) {
  unsigned int b=0;
  while (n) {
    b+=n & 1;
    n>>1;
  }
return b;
}
```

The function f() returns the int that represents the ____P____ in the binary representation of positive integer n, where P is

A. number of $0$'s
B. number of bits
C. number of consecutive $1$'s
D. number of $1$'s

ugcnetcse-june2019-paper2 programming-in-c

Answer key

## 30.14 Software Design (1) top

### 30.14.1 Software Design: UGC NET CSE | December 2012 | Part 3 | Question: 54 top

The Object Modelling Technique (OMT) uses the following three kinds of model to describe a system

A. Class Model , Object Model and Analysis Model
B. Object Model, Dynamic Model and Functional Model
C. Class Model, Dynamic Model and Functional Model
D. Object Model, Analysis Model and Dynamic Model

ugcnetcse-dec2012-paper3 software-design object-oriented-programming

Answer key

## 30.15 Template Vs Macro (1) top

### 30.15.1 Template Vs Macro: UGC NET CSE | Junet 2015 | Part 2 | Question: 14 top

Which of the following is incorrect in C++?

A. when we write overloaded function we must code the function for each usage
B. when we write function template we code the function only once
C. it is difficult to debug macros
D. templates are more efficient than macros

ugcnetcse-june2015-paper2 oops template-vs-macro

Answer key

## 30.16 Windows (1) top

## 30.16.1 Windows: UGC NET CSE | June 2014 | Part 3 | Question: 53 top

The syntax of capturing events method for document object is

A. CaptureEvents()
B. CaptureEvents(Orgs eventType)
C. CaptureEvents(eventType)
D. CaptureEvents(eventVal)

ugcnetjune2014iii windows object-oriented-programming

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 30.0.1 | Q-Q | 30.0.2 | Q-Q | 30.0.3 | X | 30.1.1 | B | 30.1.2 | C |
| 30.2.1 | Q-Q | 30.2.2 | B | 30.3.1 | Q-Q | 30.4.1 | Q-Q | 30.4.2 | Q-Q |
| 30.4.3 | Q-Q | 30.5.1 | Q-Q | 30.6.1 | Q-Q | 30.7.1 | Q-Q | 30.8.1 | Q-Q |
| 30.8.2 | C | 30.9.1 | B | 30.9.2 | C | 30.9.3 | A | 30.10.1 | A |
| 30.10.2 | C | 30.10.3 | B | 30.10.4 | D | 30.10.5 | B | 30.10.6 | A |
| 30.10.7 | B | 30.10.8 | C | 30.10.9 | X | 30.10.10 | D | 30.11.1 | Q-Q |
| 30.11.2 | C | 30.11.3 | A | 30.11.4 | A | 30.11.5 | B | 30.11.6 | D |
| 30.11.7 | B | 30.11.8 | A | 30.11.9 | A | 30.11.10 | D | 30.11.11 | A |
| 30.11.12 | D | 30.11.13 | A | 30.11.14 | Q-Q | 30.11.15 | Q-Q | 30.11.16 | Q-Q |
| 30.11.17 | C | 30.11.18 | A | 30.11.19 | C | 30.11.20 | B | 30.11.21 | A |
| 30.11.22 | D | 30.11.23 | B | 30.11.24 | A | 30.12.1 | D | 30.13.1 | D |
| 30.14.1 | B | 30.15.1 | X | 30.16.1 | C | | | | |

# 31 Non GATE: Optimization (18)

## 31.1 Assignment Problem (2) top

### 31.1.1 Assignment Problem: UGC NET CSE | June 2014 | Part 3 | Question: 59 top

The given maximization assignment problem can be converted into a minimization problem by

A. Subtracting each entry in a column from the maximum value in that column.
B. Subtracting each entry in the table from the maximum value in that table.
C. Adding each entry in a column from the maximum value in that column.
D. Adding maximum value of the table to each entry in the table.

ugcnetjune2014iii optimization assignment-problem

Answer key

### 31.1.2 Assignment Problem: UGC NET CSE | Junet 2015 | Part 3 | Question: 67 top

In the Hungarian method for solving assignment problem, an optimal assignment requires that the maximum number of lines that can be drawn through squares with zero opportunity cost be equal to the number of

A. rows or columns
B. rows + columns
C. rows + columns -1
D. rows + columns +1

ugcnetcse-june2015-paper3 assignment-problem optimization

Answer key

## 31.2 Dual Linear Programming (1) top

### 31.2.1 Dual Linear Programming: UGC NET CSE | December 2012 | Part 3 | Question: 24 top

If dual has an unbounded solution, then its corresponding primal has

A. no feasible solution
B. unbounded solution
C. feasible solution
D. none of these

ugcnetcse-dec2012-paper3 optimization dual-linear-programming

Answer key

## 31.3 Linear Programming (1) top

### 31.3.1 Linear Programming: UGC NET CSE | October 2020 | Part 2 | Question: 4 top

Consider the following linear programming (LP):

$$\begin{aligned} \text{Max.} \quad & z = 2x_1 + 3x_2 \\ \text{Such that} \quad & 2x_1 + x_2 \leq 4 \\ & x_1 + 2x_2 \leq 5 \\ & x_1, x_2 \geq 0 \end{aligned}$$

The optimum value of the LP is

A. $23$
B. $9.5$
C. $13$
D. $8$

ugcnetcse-oct2020-paper2 non-gate linear-programming

Answer key

## 31.4 Linear Programming Problem (1) top

### 31.4.1 Linear Programming Problem: UGC NET CSE | December 2013 | Part 3 | Question: 1 top

If the primal Linear Programming problem has unbounded solution, then it's dual problem will have

A. feasible solution
B. alternative solution
C. no feasible solution at all
D. no alternative solution at all

ugcnetcse-dec2013-paper3 optimization linear-programming-problem

Answer key

## 31.5 Optimization (8) top

### 31.5.1 Optimization: UGC NET CSE | December 2012 | Part 3 | Question: 18 top

In a Linear Programming Problem, suppose there are three basic variables and 2 non-basic variables, then the possible number of basic solutions are

A. 6 B. 8 C. 10 D. 12

ugcnetcse-dec2012-paper3 optimization linear-programming

Answer key

### 31.5.2 Optimization: UGC NET CSE | December 2013 | Part 3 | Question: 2 top

Given the problem to maximize $f(x), X = (x_1, x_2, \ldots, x_n)$ subject to m number of in equality constraints. $g_i(x) \leq b_i$, i=1, 2, .... m including the non-negativity constrains $x \geq 0$. Which of the following conditions is a Kuhn-Tucker necessary condition for a local maxima at $\bar{x}$?

A. $\frac{\partial L(\bar{X},\bar{\lambda},\bar{S})}{\partial x_j} = 0, j = 1, 2 \ldots m$
B. $\bar{\lambda}_i[g_i(\bar{X}) - b_i] = 0, i = 1, 2 \ldots m$
C. $g_i(\bar{X}) \leq b_i, i = 1, 2 \ldots m$
D. All of these

ugcnetcse-dec2013-paper3 optimization linear-programming

Answer key

### 31.5.3 Optimization: UGC NET CSE | December 2013 | Part 3 | Question: 3 top

The following Linear Programming problem has:

$$\text{Max} \quad Z = x_1 + x_2$$

Subject to $\quad x_1 - x_2 \geq 0$

$$3x_1 - x_2 \leq -3$$

$$\text{and} \quad x_1, x_2 \geq 0$$

A. Feasible solution
B. No feasible solution
C. Unbounded solution
D. Single point as solution

ugcnetcse-dec2013-paper3 optimization linear-programming

Answer key

### 31.5.4 Optimization: UGC NET CSE | December 2015 | Part 3 | Question: 47 top

In constraint satisfaction problem, constraints can be stated as

A. Arithmetic equations and inequalities that bind the values of variables
B. Arithmetic equations and inequalities that does not bind any restriction over variables
C. Arithmetic equations that impose restrictions over variables
D. Arithmetic equations that discard constraints over the given variables

ugcnetcse-dec2015-paper3 optimization

Answer key

### 31.5.5 Optimization: UGC NET CSE | December 2015 | Part 3 | Question: 52 top

A basic feasible solution of a linear programming problem is said to be _____ if at least one of the basic variable is zero

A. generate B. degenerate C. infeasible D. unbounded

ugcnetcse-dec2015-paper3 optimization linear-programming

Answer key

### 31.5.6 Optimization: UGC NET CSE | June 2012 | Part 3 | Question: 46 top

The feasible region represented by the constraints $x_1 - x_2 \leq 1, x_1 + x_2 \geq 3, x_1 \geq 0, x_2 \geq 0$ of the objective function Max $Z = 3x_1 + 2x_2$ is

A. A polygon
B. Unbounded feasible region
C. A point
D. None of these

ugcnetcse-june2012-paper3 optimization linear-programming

Answer key

### 31.5.7 Optimization: UGC NET CSE | June 2014 | Part 3 | Question: 58 top

Which of the following special cases does not require reformulation of the problem in order to obtain a solution ?

A. Alternate optimality
B. Infeasibility
C. Unboundedness
D. All of the above

ugcnetjune2014iii optimization

Answer key

### 31.5.8 Optimization: UGC NET CSE | Junet 2015 | Part 3 | Question: 69 top

Given the following statements with respect to linear programming problem:

S1: The dual of the dual linear programming problem is again the primal problem

S2: If either the primal or the dual problem has an unbounded objective function value, the other problem has no feasible solution

S3: If either the primal or the dual problem has a finite optimal solution, the other one also possess the same, and the optimal value of the objective functions of the two problems are equal.

Which of the following is true?

A. S1 and S2
B. S1 and S3
C. S2 and S3
D. S1, S2 and S3

ugcnetcse-june2015-paper3 optimization linear-programming

Answer key

## 31.6 Transportation Problem (5) top

### 31.6.1 Transportation Problem: UGC NET CSE | December 2012 | Part 3 | Question: 28 top

The initial basic feasible solution to the following transportation problem using Vogel's approximation method is

| | $D_1$ | $D_2$ | $D_3$ | $D_4$ | **Supply** |
|---|---|---|---|---|---|
| $S_1$ | 1 | 2 | 1 | 4 | 30 |
| $S_2$ | 3 | 3 | 2 | 1 | 50 |
| $S_3$ | 4 | 2 | 5 | 9 | 20 |
| **Demand** | 20 | 40 | 30 | 10 | |

A. $x_{11} = 20, x_{13} = 10, x_{21} = 20, x_{23} = 20, x_{24} = 10, x_{32} = 10$, Total cost $= 180$
B. $x_{11} = 20, x_{12} = 20, x_{13} = 10, x_{22} = 20, x_{23} = 20, x_{24} = 10$, Total cost $= 180$
C. $x_{11} = 20, x_{13} = 10, x_{22} = 20, x_{23} = 20, x_{24} = 10, x_{32} = 10$, Total cost $= 180$
D. None of the above

ugcnetcse-dec2012-paper3 optimization transportation-problem

Answer key

## 31.6.2 Transportation Problem: UGC NET CSE | December 2015 | Part 3 | Question: 53 top

Consider the following conditions:

a. The solution must be feasible, i.e. it satisfy all the supply and demand constraints.

b. The number of positive allocations must be equal to $m+n-1$, where $m$ is the number of rows and $n$ is the number of columns.

c. All the supply and demand constraints are independent.

The initial solution of a transportation problem is said to be non-degenerate basic feasible solution if it satisfies:

A. $a$ and $b$ only B. $a$ and $c$ only C. $b$ and $c$ only D. $a$, $b$ and $c$

ugcnetcse-dec2015-paper3 optimization transportation-problem

Answer key

## 31.6.3 Transportation Problem: UGC NET CSE | December 2015 | Part 3 | Question: 54 top

Consider the following transportation problem:

| Factories | Stores | | | | |
|---|---|---|---|---|---|
| | | I | II | III | IV | Supply |
| | A | 4 | 6 | 8 | 13 | 50 |
| | B | 13 | 11 | 10 | 8 | 70 |
| | C | 14 | 4 | 10 | 13 | 30 |
| | D | 9 | 11 | 13 | 8 | 50 |
| | Demand | 25 | 35 | 105 | 20 | |

The transportation cost in the initial basic feasible solution of the above transportation problem using Vogel's Approximation method is

A. $1450$ B. $1465$ C. $1480$ D. $1520$

ugcnetcse-dec2015-paper3 optimization transportation-problem

Answer key

## 31.6.4 Transportation Problem: UGC NET CSE | June 2014 | Part 3 | Question: 60 top

The initial basic feasible solution of the following transportion problem:

| | | Destination | | | |
|---|---|---|---|---|---|
| | | $D_1$ | $D_2$ | $D_3$ | Supply |
| Origins | $O_1$ | 2 | 7 | 4 | 5 |
| | $O_2$ | 3 | 3 | 1 | 8 |
| | $O_3$ | 5 | 4 | 7 | 7 |
| | $O_4$ | 1 | 6 | 2 | 14 |
| | Demand | 7 | 9 | 18 | |

is given as

| | | |
|---|---|---|
| 5 | | |
| | | 8 |
| | 7 | |
| 2 | 2 | 10 |

then the minimum cost is

A. 76 B. 78 C. 80 D. 82

ugcnetjune2014iii optimization transportation-problem

Answer key

## 31.6.5 Transportation Problem: UGC NET CSE | Junet 2015 | Part 3 | Question: 68 top

Consider the following transportation problem:

| ↓ | → Warehouse | | | |
|---|---|---|---|---|
| | | $W_1$ | $W_2$ | $W_3$ | Supply |
| Factory | $F_1$ | 16 | 20 | 12 | 200 |
| | $F_2$ | 14 | 8 | 18 | 160 |
| | $F_3$ | 26 | 24 | 16 | 90 |
| | Demand | 180 | 120 | 150 | |

The initial basic feasible solution of the above transportation problem using Vogel's Approximation method (VAM) is given below:

→ Warehouse

| ↓ Factory | | $W_1$ | $W_2$ | $W_3$ | Supply |
|---|---|---|---|---|---|
| | $F_1$ | 16 (140) | 20 | 12 (60) | 200 |
| | $F_2$ | 14 (40) | 8 (120) | 18 | 160 |
| | $F_3$ | 26 | 24 | 16 (90) | 90 |
| | Demand | 180 | 120 | 150 | |

The solution of the above problem:

A. is degenerate solution
B. is optimum solution
C. needs to improve
D. is infeasible solution

ugcnetcse-june2015-paper3 transportation-problem optimization

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 31.1.1 | B | 31.1.2 | A | 31.2.1 | A | 31.3.1 | D | 31.4.1 | C |
| 31.5.1 | C | 31.5.2 | D | 31.5.3 | B | 31.5.4 | A | 31.5.5 | A |
| 31.5.6 | B | 31.5.7 | A | 31.5.8 | D | 31.6.1 | D | 31.6.2 | A |
| 31.6.3 | B | 31.6.4 | A | 31.6.5 | B | | | | |

## 32.0.1 UGC NET CSE | October 2022 | Part 1 | Question:: 2 top

Consider two lists A and B of three strings on {0, 1}

X :

| List A | List B |
|---|---|
| 1 | 111 |
| 10111 | 10 |
| 10 | 0 |

Y :

| List A | List B |
|---|---|
| 10 | 101 |
| 011 | 11 |
| 101 | 011 |

Which of the following is true?

**Options:-**

- Only PCP in X has solution.,

**Option ID :- 1477,**

- Only PCP in Y has solution.,

**Option ID :- 1478,**

- PCP in both X and Y has solution.,

**Option ID :- 1479,**

- PCP neither in X nor in Y has solution.,

**Option ID :- 1480,**

**Answer Given:-** Only PCP in Y has solution., **Option ID : -1478**

Consider two lists $\mathrm{A}$ and $\mathrm{B}$ of three strings on $\{0,1\}$

$X$ :

| List A | List B |
|---|---|
| $1$ | $111$ |
| $10111$ | $10$ |
| $10$ | $0$ |

$Y$:

| List A | List B |
|---|---|
| $10$ | $101$ |
| $011$ | $11$ |
| $101$ | $011$ |

Which of the following is true?

A. Only PCP in $\mathrm{X}$ has solution.,
B. Only PCP in $\mathrm{Y}$ has solution.,
C. PCP in both $\mathrm{X}$ and $\mathrm{Y}$ has solution.
D. PCP neither in $\mathrm{X}$ nor in $\mathrm{Y}$ has solution.,

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Answer key

## 32.0.2 UGC NET CSE | October 2022 | Part 1 | Question:: 29 top

Which of the following is correct for the destination address 4A : 30 : 10 : 21 : 10 : 1A?

**Options:-**

- unicast address ,

**Option ID :- 1421,**

- multicast address ,

**Option ID :- 1422,**

- broadcast address ,

**Option ID :- 1423,**

- unicast and broadcast address ,

**Option ID :- 1424,**

Which of the following is correct for the destination address $4\mathrm{A}:30:10:21:10:1\mathrm{A}$ ?

A. unicast address
B. multicast address
C. broadcast address
D. unicast and broadcast address

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## 32.0.3 UGC NET CSE | October 2022 | Part 1 | Question:: 80 top

RAD software process model stands for

**Options:-**

- Rapid Application Development ,

**Option ID :- 1357,**

- Relative Application Development ,

**Option ID :- 1358,**

- Rapid Application Design ,

**Option ID :- 1359,**

- Recent Application Development ,

**Option ID :- 1360,**

$\mathrm{RAD}$ software process model stands for

A. Rapid Application Development
B. Relative Application Development
C. Rapid Application Design
D. Recent Application Development,

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## 32.0.4 UGC NET CSE | October 2022 | Part 1 | Question:: 78 top

A magnetic tape drive has transport speed of 200 inches per second and a recording density of 1600 bytes per inch. The time required to write 600000 bytes of data grouped in 100 characters record with a blocking factor 10 is

**Options:-**

- 2.0625 sec ,

**Option ID :- 1473,**

- 2.6251 sec ,

**Option ID :- 1474,**

- 2.0062 sec ,

**Option ID :- 1475,**

- 2.6150 sec ,

**Option ID :- 1476,**

A magnetic tape drive has transport speed of $200$ inches per second and a recording density of $1600$ bytes per inch. The time required to write $600000$ bytes of data grouped in $100$ characters record with a blocking factor $10$ is

A. $2.0625\text{sec}$
B. $2.6251\text{sec}$
C. $2.0062\text{sec}$
D. $2.6150\text{sec}$

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## 32.0.5 UGC NET CSE | October 2022 | Part 1 | Question:: 22 top

Consider the language $L = \{a^n b^m : n \geq 4, m \leq 3\}$

Which of the following regular expression represents language L?

**Options:-**

- aaaa*(λ + b + bb + bbb) ,

**Option ID :- 1313,**

- aaaaa*(b + bb + bbb) ,

**Option ID :- 1314,**

- aaaaa*(λ + b + bb + bbb) ,

**Option ID :- 1315,**

- aaaa*(b + bb + bbb) ,

**Option ID :- 1316,**

Consider the language $L = \{a^n b^m : n \geq 4, m \leq 3\}$
Which of the following regular expression represents language L?

A. aaaa* $(\lambda + b + bb + bbb)$
B. aaaaa*$(b + bb + bbb)$
C. aaaaa *$(\lambda + b + bb + bbb)$
D. aaaa* $(b + bb + bbb)$

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## 32.0.6 UGC NET CSE | October 2022 | Part 1 | Question:: 23 top

Consider the following NPDA = $(\{q_0, q_1, q_f\}, \{a, b\}, \{1, z\}, \delta, q_0, z, \{q_f\})$

$\delta(q_0, \lambda, z) = \{(q_f, z)\}$

$\delta(q_0, a, z) = \{(q_1, 11z)\}$

$\delta(q_1, a, 1) = \{(q_1, 111)\}$

$\delta(q_1, b, 1) = \{(q_1, \lambda)\}$

$\delta(q_1, \lambda, z) = \{(q_f, z)\}$

Which of the following Language L is accepted by NPDA?

**Options:-**

- $L = \{a^{2n}b^n : n \geq 0\}$ ,

**Option ID :- 1321,**

- $L = \{a^n b^{2n} : n \geq 0\}$ ,

**Option ID :- 1322,**

- $L = \{a^{2n}b^n : n > 0\}$ ,

**Option ID :- 1323,**

- $L = \{a^n b^{2n} : n > 0\}$ ,

**Option ID :- 1324,**

Consider the following $\text{NPDA} = (\{q_0, q_1, q_f\}\ \{a, b\}, \{1, z\}, \delta, q_0, z, \{q_f\})$

$$\delta(q_0, \lambda, z) = \{(q_f, z)\}$$
$$\delta(q_0, a, z) = \{(q_1, 11z)\}$$
$$\delta(q_1, a, 1) = \{(q_1, 111)\}$$
$$\delta(q_1, b, 1) = \{(q_1, \lambda)\}$$
$$\delta(q_1, \lambda, z) = \{(q_f, z)\}$$

Which of the following Language $L$ is accepted by $\text{NPDA}$?

A. $L = \{a^{2n}b^n : n \geq 0\}$
B. $L = \{a^n b^{2n} : n \geq 0\}$
C. $L = \{a^{2n}b^n : n > 0\}$
D. $L = \{a^n b^{2n} : n > 0\}$

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## 32.0.7 UGC NET CSE | October 2022 | Part 1 | Question:: 24 top

Given below are two statements :

Statement I : Consider 20 bit 'Branch' microinstruction code format given below:

| 3 | 3 | 3 | 2 | 2 | 7 |
|---|---|---|---|---|---|
| F1 | F2 | F3 | CD | BR | AD |

F1, F2, F3 : Micro-operation fields

CD : Condition for branching

BR : Branch field

AD : Address field

Statement II : Instruction represented in above format can perform branch in 4 conditions.

In the light of the above statements, choose the most appropriate answer from the options given below :

**Options:-**

- Both Statement I and Statement II are correct ,

**Option ID :- 1617,**

- Both Statement I and Statement II are incorrect ,

**Option ID :- 1618,**

- Statement I is correct but Statement II is incorrect ,

**Option ID :- 1619,**

- Statement I is incorrect but Statement II is correct ,

**Option ID :- 1620,**

Given below are two statements :

**Statement I**: Consider $20$ bit 'Branch' microinstruction code format given below:

| | | | | | |
|---|---|---|---|---|---|
| 3 | 3 | 3 | 2 | 2 | 7 |
| F1 | F2 | F3 | CD | BR | AD |

$\text{F1, F2. F3}$ : Micro-operation fields

$\text{CD}$ : Condition for branching

BR : Branch field
AD: Address field

**Statement II**: Instruction represented in above format can perform branch in
In the light of the above statements, choose the most appropriate answer from the options given below :

A. Both Statement I and Statement II are correct
B. Both Statement I and Statement II are incorrect
C. Statement I is correct but Statement II is incorrect
D. Statement I is incorrect but Statement II is correct

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## 32.0.8 UGC NET CSE | October 2022 | Part 1 | Question:: 25 top

Which mode is a block cipher implementation as a self synchronizing stream cipher?

**Options:-**

- Cipher Block Chaining Mode,
**Option ID :- 1397,**
- Cipher Feedback Mode,
**Option ID :- 1398,**
- Electronic Codebook Mode,
**Option ID :- 1399,**
- Output Feedback Mode,
**Option ID :- 1400,**

Which mode is a block cipher implementation as a self-synchronizing stream cipher?

A. Cipher Block Chaining Mode,
B. Cipher Feedback Mode
C. Electronic Codebook Mode
D. Output Feedback Mode

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## 32.0.9 UGC NET CSE | October 2022 | Part 1 | Question:: 26 top

Consider the following :

| | List I | | List II |
|---|---|---|---|
| (A) | Activation record | (I) | Linking Loader |
| (B) | Location counter | (II) | Garbage Collection |
| (C) | Reference count | (III) | Subroutine Call |
| (D) | Address relocation | (IV) | Assembler |

Which of the following is correct matching ?

**Options:-**

- (A)-(III), (B)-(IV), (C)-(I), (D)-(II),
**Option ID :- 1485,**
- (A)-(IV), (B)-(III), (C)-(I), (D)-(II),
**Option ID :- 1486,**
- (A)-(IV), (B)-(III), (C)-(II), (D)-(I),
**Option ID :- 1487,**
- (A)-(II), (B)-(III), (C)-(I), (D)-(IV),

Consider the following :

| List I | List II |
|---|---|
| (A) Activation record | (I) Linking Loader |
| (B) Location counter | (II) Garbage Collection |
| (C) Reference count | (III) Subroutine Call |
| (D) Address relocation | (IV) Assembler |

Which of the following is correct matching ?

A. (A)-(III),(B)-(IV), (C) -(I), (D)-(II)
B. (A) -(IV), (B) – (III), (C)– (I), (D) – (II)
C. (A)-(IV), (B) – (III), (C) – (II), (D) – (I)

D. $(\mathrm{A})$-$(\mathrm{II})$, $(\mathrm{B})-(\mathrm{III}), (\mathrm{C})-(\mathrm{I}), (\mathrm{D})-(\mathrm{IV})$

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## 32.0.10 UGC NET CSE | October 2022 | Part 1 | Question:: 27 top

Alpha and Beta testing are forms of

**Options:-**

- White – Box Testing ,
**Option ID :- 1369,**
- Black – Box Testing ,
**Option ID :- 1370,**
- Acceptance Testing ,
**Option ID :- 1371,**
- System Testing ,
**Option ID :- 1372,**

Alpha and Beta testing are forms of

A. White-Box Testing
B. Black-Box Testing
C. Acceptance Testing
D. System Testing

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## 32.0.11 UGC NET CSE | October 2022 | Part 1 | Question:: 28 top

Consider the properties of recursively enumerable sets :

(A) Finiteness
(B) Context Freedom
(C) Emptiness

Which of the following is true?

**Options:-**

- Only (A) and (B) are not decidable ,
**Option ID :- 1481,**
- Only (B) and (C) are not decidable ,
**Option ID :- 1482,**
- Only (C) and (A) are not decidable ,
**Option ID :- 1483,**
- All (A), (B) and (C) are not decidable ,
**Option ID :- 1484,**

Consider the properties of recursively enumerable sets :
$(\mathrm{A})$ Finiteness
$(\mathrm{B})$ Context Freedom
$(\mathrm{C})$ Emptiness
Which of the following is true?

A. Only $(\mathrm{A})$ and $(\mathrm{B})$ are not decidable
B. Only $(\mathrm{B})$ and $(\mathrm{C})$ are not decidable
C. Only $(\mathrm{C})$ and $(\mathrm{A})$ are not decidable,
D. All $(\mathrm{A})$, $(\mathrm{B})$ and $(\mathrm{C})$ are not decidable

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## 32.0.12 UGC NET CSE | October 2022 | Part 1 | Question:: 21 top

Consider a memory system having address spaced at a distance of $m$, T = Bank cycle time and $n$ number of banks, then the average data access time per word access in synchronous organization is

**Options:-**

- $t = \begin{cases} m.\frac{T}{n} & \text{for } m << n \\ T & \text{for } m >> n \end{cases}$ ,
**Option ID :- 1269,**
- $t = \begin{cases} T/n & \text{for } m << n \\ T & \text{for } m >> n \end{cases}$ ,
**Option ID :- 1270,**
- $t = \begin{cases} m.T & \text{for } m << n \\ T & \text{for } m >> n \end{cases}$ ,
**Option ID :- 1271,**
- $t = \begin{cases} m.T & \text{for } m << n \\ m/T & \text{for } m >> n \end{cases}$ ,

Consider a memory system having address spaced at a distance of $m, T =$ Bank cycle time and $n$ number of banks, then the average data access time per word access in synchronous organization is

1. $$t = \begin{cases} m, \frac{T}{n} \text{ for } m \ll n \\ T \text{ for } m \gg n \end{cases}$$

2. $$t = \begin{cases} T/n \text{ for } m \ll n \\ T \text{ for } m \gg n \end{cases}$$

3. $$t = \begin{cases} m.T \text{ for } m \ll n \\ T \text{ for } m \gg n \end{cases}$$

4. $$t = \begin{cases} m \cdot T \text{ for } m \ll n \\ m/T \text{ for } m \gg n \end{cases}$$

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## 32.0.13 UGC NET CSE | October 2022 | Part 1 | Question:: 84 top

The total storage capacity of a floppy disk having 80 tracks and storing 128 bytes/sector is 163,840 bytes. How many sectors does this disk have?

**Options:-**

- $2^7$ ,

**Option ID :- 1289,**

- 2048 ,

**Option ID :- 1290,**

- 4K ,

**Option ID :- 1291,**

- 16 ,

**Option ID :- 1292,**

The total storage capacity of a floppy disk having $80$ tracks and storing $128$ bytes/sector is $163,840$ bytes. How many sectors does this disk have?

1. $2^7$
2. $2048$
3. $4\,\mathrm{K}$
4. $16$

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## 32.0.14 UGC NET CSE | October 2022 | Part 1 | Question:: 104 top

Based on the following passage, answer the Questions :

A 3000 km long trunk operates at 1.536 mbps and is used to transmit 64 bytes frames and uses sliding window protocol. The propagation speed is 6 μ sec/km.

The sender window size to get the maximum efficiency is

**Options:-**

- 108 ,

**Option ID :- 1649,**

- 109 ,

**Option ID :- 1650,**

- 55 ,

**Option ID :- 1651,**

- 56 ,

**Option ID :- 1652,**

Based on the following passage, answer the Questions :

A $3000\,\mathrm{km}$ long trunk operates at $1.536\mathrm{mbps}$ and is used to transmit 64 bytes frames and uses sliding window protocol. The propagation speed is $6\mu\mathrm{sec/km}$.

The sender window size to get the maximum efficiency is

A. $108$ B. $109$ C. $55$ D. $56$

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## 32.0.15 UGC NET CSE | October 2022 | Part 1 | Question:: 32 top

Consider the properties of recursively enumerable sets :

(A) Finiteness
(B) Context Freedom
(C) Emptiness

Which of the following is true?

**Options:-**

- Only (A) and (B) are not decidable ,

**Option ID :- 1481,**

- Only (B) and (C) are not decidable ,

**Option ID :- 1482,**

- Only (C) and (A) are not decidable ,

**Option ID :- 1483,**

- All (A), (B) and (C) are not decidable ,

**Option ID :- 1484,**

Consider the properties of recursively enumerable sets :
(A) Finiteness
(B) Context Freedom
(C) Emptiness

Which of the following is true?

A. Only $(\mathrm{A})$ and $(\mathrm{B})$ are not decidable
B. Only $(\mathrm{B})$ and $(\mathrm{C})$ are not decidable
C. Only $(\mathrm{C})$ and $(\mathrm{A})$ are not decidable,
D. All $(\mathrm{A})$, $(\mathrm{B})$ and $(\mathrm{C})$ are not decidable

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## 32.0.16 UGC NET CSE | October 2022 | Part 1 | Question:: 33 top

Which of the following is correct for the destination address 4A : 30 : 10 : 21 : 10 : 1A?

**Options:-**

- unicast address ,

**Option ID :- 1421,**

- multicast address ,

**Option ID :- 1422,**

- broadcast address ,

**Option ID :- 1423,**

- unicast and broadcast address ,

**Option ID :- 1424,**

Which of the following is correct for the destination address $4\mathrm{A}:30:10:21:10:1\mathrm{A}$ ?

A. unicast address
B. multicast address
C. broadcast address
D. unicast and broadcast address

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Answer key

## 32.0.17 UGC NET CSE | October 2022 | Part 1 | Question:: 34 top

The model in which the requirements are implemented by its category is

**Options:-**

- Evolutionary Development Model ,

**Option ID :- 1385,**

- Waterfall Model ,

**Option ID :- 1386,**

- Prototyping Model ,

**Option ID :- 1387,**

- Iterative Enhancement Model ,

**Option ID :- 1388,**

The model in which the requirements are implemented by its category is

A. Evolutionary Development Model
B. Waterfall Model
C. Prototyping Model
D. Iterative Enhancement Model

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## 32.0.18 UGC NET CSE | October 2022 | Part 1 | Question:: 35 top

The condition num! = 65 cannot be replaced by

**Options:-**

- num > 65 || num < 65 ,

**Option ID :- 1333,**

- ! (num = = 65) ,

**Option ID :- 1334,**

- num – 65 ,

**Option ID :- 1335,**

- ! (num – 65) ,

**Option ID :- 1336,**

The condition $\text{num!} = 65$ cannot be replaced by

A. $\text{num} > 65 \,||\, \text{num} < 65$
B. $!(\text{num} == 65)$
C. $\text{num} - 65$
D. $!(\text{num} - 65)$

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## 32.0.19 UGC NET CSE | October 2022 | Part 1 | Question:: 36 top

Consider an error free 64 kbps satellite channel used to send 512 byte data frames in one direction with very short acknowledgements coming back the other way. What is the maximum throughput for window size of 15?

**Options:-**

- 32 kbps ,

**Option ID :- 1405,**

- 48 kbps ,

**Option ID :- 1406,**

- 64 kbps ,

**Option ID :- 1407,**

- 70 kbps ,

**Option ID :- 1408,**

Consider an error-free $64\text{kbps}$ satellite channel used to send $512$ byte data frames in one direction with very short acknowledgements coming back the other way. What is the maximum throughput for window size of $15$?

A. $32\text{kbps}$
B. $48\text{kbps}$
C. $64\text{kbps}$
D. $70\text{kbps}$,

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## 32.0.20 UGC NET CSE | October 2022 | Part 1 | Question:: 37 top

The logic expression $(\bar{P} \wedge Q) \vee (P \wedge \bar{Q}) \vee (P \wedge Q)$ is equivalent to

**Options:-**

- $\bar{P} \vee Q$ ,

**Option ID :- 1301,**

- $P \vee \bar{Q}$ ,

**Option ID :- 1302,**

- $P \vee Q$ ,

**Option ID :- 1303,**

- $\bar{P} \vee \bar{Q}$ ,

**Option ID :- 1304,**

The logic expression $(\bar{P} \wedge Q) \vee (P \wedge \bar{Q}) \vee (P \wedge Q)$ is equivalent to

A. $\bar{P} \vee Q$,
B. $P \vee \bar{Q}$
C. $P \vee Q$
D. $\bar{P} \vee \bar{Q}$

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Answer key

## 32.0.21 UGC NET CSE | October 2022 | Part 1 | Question:: 30 top

Consider the following :

| | List I | | List II |
|---|---|---|---|
| (A) | Activation record | (I) | Linking Loader |
| (B) | Location counter | (II) | Garbage Collection |
| (C) | Reference count | (III) | Subroutine Call |
| (D) | Address relocation | (IV) | Assembler |

Which of the following is correct matching ?

**Options:-**

- (A)-(III), (B)-(IV), (C)-(I), (D)-(II) ,

**Option ID :- 1485,**

- (A)-(IV), (B)-(III), (C)-(I), (D)-(II) ,

**Option ID :- 1486,**

- (A)-(IV), (B)-(III), (C)-(II), (D)-(I) ,

**Option ID :- 1487,**

- (A)-(II), (B)-(III), (C)-(I), (D)-(IV) ,

Consider the following:

Which of the following is correct matching ?

| List I | List II |
|---|---|
| (A) Activation record | (I) Linking Loader |
| (B) Location counter | (II) Garbage |
| (C) Reference count | (III) Subroutine Call |
| (D) Address relocation | (IV) Assembler |

A. $(A)-(III),(B)-(IV),(C)-(I),(D)-(II)$
B. $(A)-(IV),(B)-(III),(C)-(I),(D)-(II)$
C. $(A)-(IV),(B)-(III),(C)-(II),(D)-(I)$
D. $(A)-(II),(B)-(III),(C)-(I),(D)-(IV)$

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## 32.0.22 UGC NET CSE | October 2022 | Part 1 | Question:: 38 top

Match List I with List II :

| | List I | | List II |
|---|---|---|---|
| (A) | DES | (I) | Key size - 256 |
| (B) | AES | (II) | Key size - 1024 |
| (C) | 3 DES | (III) | Key size - 56 |
| (D) | RSA | (IV) | Key size - 168 |

Choose the correct answer from the options given below :

**Options:-**

- (A)-(I), (B)-(II), (C)-(IV), (D)-(III) ,

**Option ID :- 1545,**

- (A)-(III), (B)-(I), (C)-(IV), (D)-(II) ,

**Option ID :- 1546,**

- (A)-(III), (B)-(IV), (C)-(II), (D)-(I) ,

**Option ID :- 1547,**

- (A)-(IV), (B)-(II), (C)-(III), (D)-(I) ,

**Option ID :- 1548,**

Match List I with List II :

| List I | List II |
|---|---|
| (A) DES | (I) Key size - $256$ |
| (B) AES | (II) Key size - $1024$ |
| (C) $3$ DES | (III) Key size - $56$ |
| (D) RSA | (IV) Key size -$168$ |

A. $(A)-(I),(B)-(II),(C)-(IV),(D)-(III)$
B. $(A)-(III),(B)-(I),(C)-(IV),(D)-(II)$
C. $(A)-(III),(B)-(IV),(C)-(II),(D)-(I)$
D. $(A)-(IV),(B)-(II),(C)-(III),(D)-(I)$

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## 32.0.23 UGC NET CSE | October 2022 | Part 1 | Question:: 20 top

Which layer divides each message into packets at the source and re-assembles them at the destination?

**Options:-**

- Network layer ,
**Option ID :- 1413,**
- Transport layer ,
**Option ID :- 1414,**
- Data link layer ,
**Option ID :- 1415,**
- Physical layer ,
**Option ID :- 1416,**

Which layer divides each message into packets at the source and re-assembles them at the destination?

1. Network layer
2. Transport layer
3. Data link layer
4. Physical layer

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## 32.0.24 UGC NET CSE | October 2022 | Part 1 | Question:: 18 top

Consider a B-tree of height h. minimum degree $t \geq 2$ that contains any n-key, where $n \geq 1$. Which of the following is correct?

**Options:-**

- $h \geq \log_t \frac{n+1}{2}$ ,
**Option ID :- 1437,**
- $h \leq \log_t \frac{n+1}{2}$ ,
**Option ID :- 1438,**
- $h \geq \log_t \frac{n-1}{2}$ ,
**Option ID :- 1439,**
- $h \leq \log_t \frac{n-1}{2}$ ,
**Option ID :- 1440,**

Consider a **B**-tree of height h. minimum degree $t \geq 2$ that contains any $\mathrm{n}$-key, where $n \geq 1$. Which of the following is correct?

A. $h \geq \log_t \frac{n+1}{2}$

B. $h \leq \log_t \frac{n+1}{2}$

C. $h \geq \log_t \frac{n-1}{2}$

D. $h \leq \log_t \frac{n-1}{2}$

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## 32.0.25 UGC NET CSE | October 2022 | Part 1 | Question:: 50 top

Consider the following in Boolean Algebra

X : $a \vee (b \wedge (a \vee c)) = (a \vee b) \wedge (a \vee c)$

Y : $a \wedge (b \vee (a \wedge c)) = (a \wedge b) \vee (a \wedge c)$

$a \vee (b \wedge c) = (a \vee b) \wedge c$ is satisfied if

**Options:-**

- X is true ,
**Option ID :- 1589,**
- Y is true ,
**Option ID :- 1590,**
- Both X and Y are true ,
**Option ID :- 1591,**
- It does not depend on X and Y ,

Consider the following in Boolean Algebra

$$\mathrm{X} : a \vee (b \wedge (a \vee c)) = (a \vee b) \wedge (a \vee c)$$
$$\mathrm{Y} : a \wedge (b \vee (a \wedge c)) = (a \wedge b) \vee (a \wedge c)$$
$$a \vee (b \wedge c) = (a \vee b) \wedge c \text{ is satisfied if}$$

A. $X$ is true
B. $Y$ is true
C. Both $X$ and $Y$ are true
D. It does not depend on $X$ and $Y$

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## 32.0.26 UGC NET CSE | December 2007 | Part 2 | Question: 49 top

Identify the incorrect statement :

A. The internet has evolved into phenomenally successful e-commerce engine
B. e-business is synonymous with e-commerce
C. The e-commerce model $B2C$ did not begin with billboardware
D. The e-commerce model $G2C$ began with billboardware

ugcnetcse-dec2007-paper2

## 32.0.27 UGC NET CSE | October 2022 | Part 1 | Question:: 4 top

Consider the following statements about Context Free Language (CFL) :

Statement I : CFL is closed under homomorphism.

Statement II : CFL is closed under complement.

Which of the following is correct?

**Options:-**

- Statement I is true and Statement II is false ,
**Option ID :- 1585,**
- Statement II is true and Statement I is false ,
**Option ID :- 1586,**
- Both Statement I and Statement II are true ,
**Option ID :- 1587,**
- Neither Statement I nor Statement II is true ,
**Option ID :- 1588,**

Consider the following statements about Context Free Language $(\mathrm{CFL})$ :
**Statement I**: $\mathrm{CFL}$ is closed under homomorphism.
**Statement II:** $\mathrm{CFL}$ is closed under complement.

Which of the following is correct?

A. Statement $\mathrm{I}$ is true and Statement II is false
B. Statement $\mathrm{II}$ is true and Statement $\mathrm{I}$ is false
C. Both Statement $\mathrm{I}$ and Statement $II$ are true
D. Neither Statement $\mathrm{I}$ nor Statement $\mathrm{II}$ is true

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Answer key

## 32.0.28 UGC NET CSE | October 2022 | Part 1 | Question:: 96 top

Read the following and Answer the questions :

Consider the relational schema of sailors S, Reserves R and Boats B.

Table 1 : Sailors S

| Sid | Sname | Ratting | Age |
|---|---|---|---|
| 22 | Dustin | 7 | 45.0 |
| 29 | Brutus | 1 | 33.0 |
| 31 | Lubber | 8 | 55.5 |
| 32 | Andy | 8 | 25.5 |
| 58 | Rusty | 10 | 35.0 |
| 64 | Horatio | 7 | 35.0 |
| 71 | Zorba | 10 | 16.0 |
| 74 | Horatio | 9 | 35.0 |
| 85 | Art | 3 | 25.5 |
| 95 | Bob | 3 | 63.5 |

Table 2 : Reserves R

| Sid | Bid | day |
|---|---|---|
| 22 | 101 | 10/10/98 |
| 22 | 102 | 10/10/98 |
| 22 | 103 | 10/8/98 |
| 22 | 104 | 10/7/98 |
| 31 | 102 | 11/10/98 |
| 31 | 103 | 11/6/98 |
| 31 | 104 | 11/12/98 |
| 64 | 101 | 9/5/98 |
| 64 | 102 | 9/8/98 |
| 74 | 103 | 9/8/98 |

Table 3 : Boats B

| Bid | Bname | Color |
|---|---|---|
| 101 | Interlake | blue |
| 102 | Interlake | red |
| 103 | Clipper | green |
| 104 | Marine | red |

Which of the following relational algebra query/queries computes/compute the name of sailors who have reserved boat 103?

Q1 $\pi_{sname}((\delta_{bid=103}\text{Boats}) \bowtie \text{Sailors})$

Q2 $\pi_{sname}(\delta_{bid=103}(\text{Reserves} \bowtie \text{Sailors}))$

Q3 $\pi_{sname}((\delta_{bid=103}\text{Reserves}) \bowtie \text{Sailors})$

**Options:-**

- Both Q1 and Q3 ,

**Option ID :- 1629,**

- Both Q2 and Q3 ,

**Option ID :- 1630,**

- Only Q3 ,

**Option ID :- 1631,**

- Only Q2 ,

**Option ID :- 1632,**

Read the following and Answer the Questions:
Consider the relational schema of sailors S. Reserves R and Boots B.

**Table 1: Sailors S**

| *Sid* | *Sname* | *Ratting* | *Age* |
|---|---|---|---|
| 22 | *Dustin* | 7 | 45.0 |
| 29 | *Brutus* | 1 | 33.0 |
| 31 | *Lubber* | 8 | 55.5 |
| 32 | *Andy* | 8 | 25.5 |
| 58 | *Rusty* | 10 | 35.0 |
| 64 | *Horatio* | 7 | 35.0 |
| 71 | *Zorba* | 10 | 16.0 |
| 74 | *Horatio* | 9 | 35.0 |
| 85 | *Art* | 3 | 25.5 |
| 95 | *Bob* | 3 | 63.5 |

**Table 2: Reserves R**

| $sid$ | $Bid$ | $day$ |
|---|---|---|
| 22 | 101 | 10/1098 |
| 22 | 108 | 101098 |
| 22 | 108 | 101898 |
| 22 | 104 | 10/798 |
| 31 | 108 | 11/1098 |
| 31 | 103 | 11/699 |
| 31 | 104 | 11/298 |
| 64 | 101 | 9558 |
| 64 | 102 | 28858 |
| 74 | 103 | 98958 |

**Table 3: Boats B**

| $Bid$ | $Bname$ | $Color$ |
|---|---|---|
| 101 | $Interlake$ | $blue$ |
| 102 | $Interlake$ | $red$ |
| 103 | $Clipper$ | $green$ |
| 104 | $Marine$ | $red$ |

Which of the following relational algebra query/queries computes/compute the name of sailors who have reserved boat 103?

Q1 $\pi$ sname (( $\delta_{bid}$ = $_{103}$ Boats) $\bowtie$ Sailors)

Q2 $\pi$ sname = ( $\delta_{bid}$ = $_{103}$(Reserves $\bowtie$ Sailors))

Q3 $\pi$ sname = (( $\delta_{bid}$ = $_{103}$ Reserves) $\bowtie$ Sailors)

A. Both Q1 and Q3
B. Both Q2 and Q3
C. Only Q3
D. Only Q2

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Answer key

## 32.0.29 UGC NET CSE | October 2022 | Part 1 | Question:: 86 top

Match List I with List II :

| List I | | List II | |
|---|---|---|---|
| (A) | Localization | (I) | Encapsulation |
| (B) | Packaging or binding of a collection of items | (II) | Abstraction |
| (C) | Mechanism that enables designer to focus on essential details of a program component. | (III) | Characteristic of software that indicates the manner in which information is concentrated in program |
| (D) | Information hiding | (IV) | Suppressing the operational details of a program component |

Choose the correct answer from the options given below :

**Options:-**

- (A)-(I), (B)-(II), (C)-(III), (D)-(IV) ,
**Option ID :- 1525,**
- (A)-(II), (B)-(I), (C)-(III), (D)-(IV) ,
**Option ID :- 1526,**
- (A)-(III), (B)-(I), (C)-(II), (D)-(IV) ,
**Option ID :- 1527,**
- (A)-(III), (B)-(I), (C)-(IV), (D)-(II)

Match List I with List II :

| List I | List II |
|---|---|
| (A) Localization | (I) Encapsulationlation |

| | |
|---|---|
| (B) Packaging or binding of a collection of items | (II) Abstraction |
| (C) Mechanism that enables designer to focus on essential details of a program component. | (III) Characteristic of software that indicates the manner in which information is concentrated in program |
| (D) Information hiding | (IV) Suppressing the operational details of a program component |

Choose the correct answer from the options given below :

A. $(A)$-$(I)$, $(B)$-$(II)$, $(C)$-$(III)$, $(D)$-$(IV)$
B. $(A)$-$(II)$, $(B)$-$(I)$, $(C)$-$(III)$, $(D)$-$(IV)$
C. $(A)$-$(III)$, $(B)$-$(I)$, $(C)$-$(II)$, $(D)$-$(IV)$
D. $(A)$-$(III)$, $(B)$-$(I)$, $(C)$-$(IV)$, $(D)$-$(II)$

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## 32.0.30 UGC NET CSE | October 2022 | Part 1 | Question:: 83 top

Consider the grammer $S \rightarrow SbS \mid a$.

Consider the following statements:

The string abababa has

(A) two parse trees

(B) two left most derivations

(C) two right most derivations

Which of the following is correct?

**Options:-**

- All (A), (B) and (C) are true ,

**Option ID :- 1493,**

- Only (B) is true ,

**Option ID :- 1494,**

- Only (C) is true ,

**Option ID :- 1495,**

- Only (A) is true ,

**Option ID :- 1496,**

Consider the grammer $S \rightarrow SbS \mid a$.
Consider the following statements:
The string abababa has

(A) two parse trees
(B) two left most derivations
(C) two right most derivations

Which of the following is correct?

A. All $(A)$. $(B)$ and $[(C)]$ are true,
B. Only $(B)$ is true
C. Only $(C)$ is true
D. Only $(A)$ is true

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## 32.0.31 UGC NET CSE | October 2022 | Part 1 | Question:: 88 top

Given below are two statements :

Statement I : "Grandparent is a parent of one's parent".

Statement II : First Order Predicate Logic (FOPL) representation of above statement is

$\forall g, c$ grandparent $(g, c) \Leftrightarrow \exists p$ parent $(g, p) \wedge$ parent $(p, c)$

In the light of the above statements, choose the most appropriate answer from the options given below :

**Options:-**

- Both Statement I and Statement II are correct ,

**Option ID :- 1613,**

- Both Statement I and Statement II are incorrect ,

**Option ID :- 1614,**

- Statement I is correct but Statement II is incorrect ,

**Option ID :- 1615,**

- Statement I is incorrect but Statement II is correct ,

**Option ID :- 1616,**

Given below are two statements :

**Statement I:** "Grandparent is a parent of one's parent".

**Statement II:** First Order Predicate Logic (FOPL) representation of above statement is
$\forall g$, c grandparent $(g, c) \Leftrightarrow \exists p$ parent $(g, p) \wedge$ parent $(p, c)$

In the light of the above statements, choose the most appropriate answer from the options given below :

A. Both Statement I and Statement II are correct
B. Both Statement I and Statement II are incorrect
C. Statement I is correct but Statement II is incorrect
D. Statement I is incorrect but Statement II is correct

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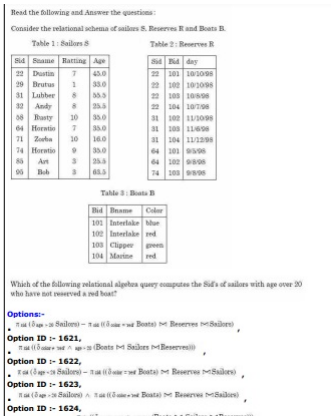
## 32.0.32 UGC NET CSE | October 2022 | Part 1 | Question:: 98 top



Read the following and Answer the Questions:
Consider the relational schema of sailors S. Reserves R and Boots B.

**Table 1: Sailors S**

| Sid | Sname | Ratting | Age |
|---|---|---|---|
| 22 | Dustin | 7 | 45.0 |
| 29 | Brutus | 1 | 33.0 |
| 31 | Lubber | 8 | 55.5 |
| 32 | Andy | 8 | 25.5 |
| 58 | Rusty | 10 | 35.0 |
| 64 | Horatio | 7 | 35.0 |
| 71 | Zorba | 10 | 16.0 |
| 74 | Horatio | 9 | 35.0 |
| 85 | Art | 3 | 25.5 |
| 95 | Bob | 3 | 63.5 |

**Table 2: Reserves R**

| Sid | Bid | day |
|---|---|---|
| 22 | 101 | 10/10/98 |
| 22 | 102 | 10/10/98 |
| 22 | 103 | 10/8/98 |
| 22 | 104 | 10/7/98 |
| 31 | 102 | 11/10/98 |
| 31 | 103 | 11/6/98 |
| 31 | 104 | 11/12/98 |
| 64 | 101 | 9/5/98 |
| 64 | 102 | 9/8/98 |
| 74 | 103 | 9/8/98 |

**Table 3: Boats B**

| Bid | Bname | Color |
|---|---|---|
| 101 | Interlake | blue |
| 102 | Interlake | red |
| 103 | Clipper | green |
| 104 | Marine | red |

Which of the following relational algebra query computes the Sid's of sailors with age over 20 who have not reserved a red boat?

**Options:-**

- $\pi_{sid}(\sigma_{age>20}\text{Sailors}) - \pi_{sid}((\sigma_{color=red}\text{Boats}) \bowtie \text{Reserves} \bowtie \text{Sailors})$ ,

**Option ID :- 1621,**

- $\pi_{sid}((\sigma_{color=red} \wedge_{age>20}(\text{Boats} \bowtie \text{Sailors} \bowtie \text{Reserves}))$ ,

**Option ID :- 1622,**

- $\pi_{sid}(\sigma_{age>20}\text{Sailors}) - \pi_{sid}((\sigma_{color=red}\text{Boats}) \bowtie \text{Reserves} \bowtie \text{Sailors})$ ,

**Option ID :- 1623,**

- $\pi_{sid}(\sigma_{age>20}\text{Sailors}) \wedge \pi_{sid}((\sigma_{color=red}\text{Boats}) \bowtie \text{Reserves} \bowtie \text{Sailors})$ ,

**Option ID :- 1624,**

Read the following and Answer the Questions:
Consider the relational schema of sailors S. Reserves R and Boots B.

**Table 1: Sailors S**

| $Sid$ | $Sname$ | $Ratting$ | $Age$ |
|---|---|---|---|
| 22 | $Dustin$ | 7 | 45.0 |
| 29 | $Brutus$ | 1 | 33.0 |
| 31 | $Lubber$ | 8 | 55.5 |
| 32 | $Andy$ | 8 | 25.5 |
| 58 | $Rusty$ | 10 | 35.0 |
| 64 | $Horatio$ | 7 | 35.0 |
| 71 | $Zorba$ | 10 | 16.0 |
| 74 | $Horatio$ | 9 | 35.0 |
| 85 | $Art$ | 3 | 25.5 |
| 95 | $Bob$ | 3 | 63.5 |

**Table 2: Reserves R**

| $sid$ | $Bid$ | $day$ |
|---|---|---|
| 22 | 101 | 10/1098 |
| 22 | 108 | 101098 |
| 22 | 108 | 101898 |
| 22 | 104 | 10/798 |
| 31 | 108 | 11/1098 |
| 31 | 103 | 11/699 |
| 31 | 104 | 11/298 |
| 64 | 101 | 9558 |
| 64 | 102 | 28858 |
| 74 | 103 | 98958 |

**Table 3: Boats B**

| $Bid$ | $Bname$ | $Color$ |
|---|---|---|
| 101 | $Interlake$ | $blue$ |
| 102 | $Interlake$ | $red$ |
| 103 | $Clipper$ | $green$ |
| 104 | $Marine$ | $red$ |

Which of the following relational algebra query/queries computes/compute the sid's of sailors with age over $20$ who have not reserved red boat?

A. $\pi$ sid $(\delta_{\text{age}} > 20$ Sailors $) - \pi$ sid $((\delta_{\ color} = {}_{red}$ Boats $) \bowtie$ Reserves $\bowtie$ Sailors $)$
B. $\pi$ sid $\left(\left(\delta_{\text{color} \neq}\right.\right.$ red $\wedge$ age $> 20$ (Boats $\bowtie$ Sailors $\bowtie$ Reserves $)))$
C. $\pi$ sid ( $\delta_{\ age} < 20$ Sailors $) - \pi$ sid $((\delta_{\ color} = {}_{red}$ Boats $) \bowtie$ Reserves $\bowtie$ Sailors $)$
D. $\pi$ sid $(\delta_{\ age} > 20$ Sailors $) \wedge \pi$ sid $((\delta_{\ color} = {}_{red}$ Boats $) \bowtie$ Reserves $\bowtie$ Sailors $)$

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## 32.0.33 UGC NET CSE | October 2022 | Part 1 | Question:: 89 top

For the following page reference string 4, 3, 2, 1, 4, 3, 5, 4, 3, 2, 1, 5, the number of page faults that occur in Least Recently Used (LRU) page replacement algorithm with frame size 3 is

**Options:-**

- 6 ,
**Option ID :- 1469,**
- 8 ,
**Option ID :- 1470,**
- 10 ,
**Option ID :- 1471,**
- 12 ,
**Option ID :- 1472,**

For the following page reference string $4, 3, 2, 1, 4, 3, 5, 4, 3, 2, 1, 5$, the number of page faults that occur in Least Recently Used $(\text{LRU})$ page replacement algorithm with frame size $3$ is

A. $6$ B. $8$ C. $10$ D. $12$

ugcnetcse-oct2022-paper1

## 32.0.34 UGC NET CSE | October 2022 | Part 1 | Question:: 91 top

Let R (ABCDEFGH) be a relation schema and F be the set of dependencies $F = \{A \to B, ABCD \to E, EF \to G, EF \to H \text{ and } ACDF \to EG\}$. The minimal cover of a set of functional dependencies is

**Options:-**

- $A \to B, ACD \to E, EF \to G$, and $EF \to H$ ,

**Option ID :- 1461,**

- $A \to B, ACD \to E, EF \to G, EF \to H$ and $ACDF \to G$ ,

**Option ID :- 1462,**

- $A \to B, ACD \to E, EF \to G, EF \to H$ and $ACDF \to E$ ,

**Option ID :- 1463,**

- $A \to B, ABCD \to E, EF \to H$ and $EF \to G$ ,

**Option ID :- 1464,**

Let R (ABCDEFGH) be a relation schema and F be the set of dependencies $F = \{A \to B, ABCD \to E, EF \to G, EF \to H$ and $ACDF \to EG\}$. The minimal cover of a set of functional dependencies is

A. $A \to B, ACD \to E, EF \to G$, and $EF \to H$
B. $A \to B, ACD \to E, EF \to G, EF \to H$ and $ACDF \to G$
C. $A \to B, ACD \to E, EF \to G, EF \to H$ and $ACDF \to E$
D. $A \to B, ABCD \to E, EF \to H$ and $EF \to G$

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## 32.0.35 UGC NET CSE | October 2022 | Part 1 | Question:: 92 top

A good software requirement specification does NOT have the characteristic

**Options:-**

- Completeness ,

**Option ID :- 1593,**

- Consistency ,

**Option ID :- 1594,**

- Clarity ,

**Option ID :- 1595,**

- Reliability ,

**Option ID :- 1596,**

A good software requirement specification does NOT have the characteristic

A. Completeness B. Consistency C. Clarity D. Reliability

ugcnetcse-oct2022-paper1

## 32.0.36 UGC NET CSE | October 2022 | Part 1 | Question:: 93 top

Consider the traversal of a tree

Preorder → ABCEIFJDGHKL

Inorder → EICFJBGDKHLA

Which of the following is correct post order traversal?

**Options:-**

- EIFJCKGLHDBA ,

**Option ID :- 1449,**

- FCGKLHDBUAE ,

**Option ID :- 1450,**

- FCGKLHDBAEIJ ,

**Option ID :- 1451,**

- IEJFCGKLHDBA ,

**Option ID :- 1452,**

Consider the traversal of a tree

Preorder → ABCEIFJDGHKL
Inorder → EICFJBGDKHLA

Which of the following is correct post order traversal?

A. EIFJCKGLHDBA B. FCGKLHDBUAE C. FCGKLHDBAEIJ D. IEJFCGKLHDBA

ugcnetcse-oct2022-paper1

## 32.0.37 UGC NET CSE | October 2022 | Part 1 | Question:: 94 top

In a game playing search tree, upto which depth $\alpha - \beta$ pruning can be applied?

(A) Root (0) level

(B) 6 level

(C) 8 level

(D) Depends on utility value in a breadth first order

Choose the correct answer from the options given below :

**Options:-**

- (B) and (C) only
  **Option ID :- 1497,**
- (A) and (B) only
  **Option ID :- 1498,**
- (A), (B) and (C) only
  **Option ID :- 1499,**
- (A) and (D) only
  **Option ID :- 1500,**

In a game playing search tree, upto which depth $\alpha - \beta$ pruning can be applied?

(A) Root $(0)$ level
(B) $6$ level
(C) $8$ level
(D) Depends on utility value in a breadth first order

Choose the correct answer from the options given below :

A. $(B)$ and $(C)$ only B. $(A)$ and $(B)$ only C. $(A)$ $(B)$ and $(C)$ only D. $(A)$ and $(D)$ only

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## 32.0.38 UGC NET CSE | October 2022 | Part 1 | Question:: 95 top

Read the following and Answer the questions :

Consider the relational schema of sailors S, Reserves R and Boats B.

Table 1 : Sailors S

| Sid | Sname | Ratting | Age |
|---|---|---|---|
| 22 | Dustin | 7 | 45.0 |
| 29 | Brutus | 1 | 33.0 |
| 31 | Lubber | 8 | 55.5 |
| 32 | Andy | 8 | 25.5 |
| 58 | Rusty | 10 | 35.0 |
| 64 | Horatio | 7 | 35.0 |
| 71 | Zorba | 10 | 16.0 |
| 74 | Horatio | 9 | 35.0 |
| 85 | Art | 3 | 25.5 |
| 95 | Bob | 3 | 63.5 |

Table 2 : Reserves R

| Sid | Bid | day |
|---|---|---|
| 22 | 101 | 10/10/98 |
| 22 | 102 | 10/10/98 |
| 22 | 103 | 10/8/98 |
| 22 | 104 | 10/7/98 |
| 31 | 102 | 11/10/98 |
| 31 | 103 | 11/6/98 |
| 31 | 104 | 11/12/98 |
| 64 | 101 | 9/5/98 |
| 64 | 102 | 9/8/98 |
| 74 | 103 | 9/8/98 |

Table 3 : Boats B

| Bid | Bname | Color |
|---|---|---|
| 101 | Interlake | blue |
| 102 | Interlake | red |
| 103 | Clipper | green |
| 104 | Marine | red |

Which of the following relational algebra query computes the names of sailors who have reserved a red and a green boat?

**Options:-**

- $\rho$ (Tempred, $\pi_{sid}$ (($\delta_{color = 'red'}$ Boats) $\bowtie$ Reserves)), $\rho$ (Tempgreen, $\pi_{sid}$ (($\delta_{color = 'green'}$ Boats) $\bowtie$Reserves)), $\pi_{sname}$ (Tempred $\cap$ Tempgreen) $\bowtie$ Sailors
  **Option ID :- 1637,**
- $\rho$ (Tempboats 2, ($\delta_{color = 'red'}$ Boats) $\cap$ ($\delta_{color = 'green'}$ Boats)) $\pi_{sname}$ (Tempboats 2 $\bowtie$ Reserves)
  **Option ID :- 1638,**
- $\pi_{sname}$ (($\delta_{color = 'red'}$ Boats) $\cap$ ($\delta_{color = 'green'}$ Boats) (Tempboats 2 $\bowtie$ Sailors $\bowtie$ Reserves))
  **Option ID :- 1639,**
- $\rho$ (Tempboats 2, ($\delta_{color = 'red' \wedge color = 'green'}$ Boats) $\pi_{sname}$ (Tempboats 2 $\bowtie$ Sailors)
  **Option ID :- 1640,**

Read the following and Answer the questions:

Consider the relational schema of sailors $S$, Reserves $B$ and Boats $B$.

**Table $1$: Sailors $S$**

| $Sid$ | $Sname$ | $Ratting$ | $Age$ |
|---|---|---|---|
| 22 | $Dustin$ | 7 | 45.0 |
| 29 | $Brutus$ | 1 | 33.0 |
| 31 | $Lubber$ | 8 | 55.5 |
| 32 | $Andy$ | 8 | 25.5 |
| 58 | $Rusty$ | 10 | 35.0 |
| 64 | $Horatio$ | 7 | 35.0 |
| 71 | $Zorba$ | 10 | 16.0 |
| 74 | $Horatio$ | 9 | 35.0 |
| 85 | $Art$ | 3 | 25.5 |
| 95 | $Bob$ | 3 | 63.5 |

**Table $2$: Reserves $\mathrm{R}$**

| $sid$ | $Bid$ | $day$ |
|---|---|---|
| 22 | 101 | $10/1098$ |
| 22 | 108 | 101098 |
| 22 | 108 | 101898 |
| 22 | 104 | $10/798$ |
| 31 | 108 | $11/1098$ |
| 31 | 103 | $11/699$ |
| 31 | 104 | $11/298$ |
| 64 | 101 | 9558 |
| 64 | 102 | 28858 |
| 74 | 103 | 98958 |

**Table $3$: Boats $\mathrm{B}$**

| $Bid$ | $Bname$ | $Color$ |
|---|---|---|
| 101 | $Interlake$ | $blue$ |
| 102 | $Interlake$ | $red$ |
| 103 | $Clipper$ | $green$ |
| 104 | $Marine$ | $red$ |

Which of the following relational algebra query computes the names of sailors who have reserved a red and a green boat?

A. $\rho$ (Tempred, $\pi$ sid $((\delta_{\text{color}} = {}'_{red'}$ Boats $) \bowtie$ Reserves)), $\rho$ (Tempgreen. $\pi$ sid $((\delta_{\text{color}} = {}'_{green'}$ Boats $)$ $\bowtie$ Reserves)), $\pi$ sname (Tempred $\cap$ Tempgreen) $\bowtie$ Sailors
B. $\rho($ Tempboats 2, $(\delta$ color $= {}'_{red'}$ Boats $) \cap (\delta$ color $= {}'_{green'}$ Boats $))\pi$ sname (Tempboats 2 $\bowtie$ Reserves)
C. $\pi$ sname $((\delta_{\text{color}} = {}'_{red'}$ Boats $) \cap (\delta_{\text{color}} = {}'_{green'}$ Boats $)$ (Tempboats $\bowtie$ Sailors $\bowtie$ Reserves))
D. $\rho($ Tempboats 2, $(\delta_{\ color} = {}_{red}$ Boats $\delta_{\ color} = {}'_{green'}$ Boats $)\pi$ sname (Tempboats 2 $\bowtie$ sailors)

## 32.0.39 UGC NET CSE | October 2022 | Part 1 | Question:: 90 top

Modules X and Y operate on the same input and output, then the cohesion is

**Options:-**

- Logical cohesion ,

**Option ID :- 1393,**

- Sequential cohesion ,

**Option ID :- 1394,**

- Procedural cohesion ,

**Option ID :- 1395,**

- Communicational cohesion ,

**Option ID :- 1396,**

Modules $X$ and $Y$ operate on the same input and output, then the cohesion is

A. Logical cohesion
B. Sequential cohesion
C. Procedural cohesion
D. Communicational cohesion

ugcnetcse-oct2022-paper1

## 32.0.40 UGC NET CSE | December 2007 | Part 2 | Question: 50 top

Identify the incorrect statement :

A. ATM provides both real time and non-real time service
B. ATM provides faster packet switching than $X.25$
C. ATM was developed as part of the work on broadband ISDN
D. ATM does not have application in Non-ISDN environments where very high data rates are required

ugcnetcse-dec2007-paper2

## 32.0.41 UGC NET CSE | October 2022 | Part 1 | Question:: 81 top

If every requirement can be checked by a cost – effective process, then SRS is called

**Options:-**

- Verifiable ,

**Option ID :- 1361,**

- Tracable ,

**Option ID :- 1362,**

- Modifiable ,

**Option ID :- 1363,**

- Complete ,

**Option ID :- 1364,**

If every requirement can be checked by a cost-effective process, then $\mathrm{SRS}$ is called

A. Verifiable
B. Traceable
C. Modifiable
D. Complete

ugcnetcse-oct2022-paper1

## 32.0.42 UGC NET CSE | October 2022 | Part 1 | Question:: 82 top

The process to gather the software requirements from client, analyze and document is known as -

**Options:-**

- Software Engineering Process ,

**Option ID :- 1373,**

- User Engineering Process ,

**Option ID :- 1374,**

- Requirement Elicitation Process ,

**Option ID :- 1375,**

- Requirement Engineering Process ,

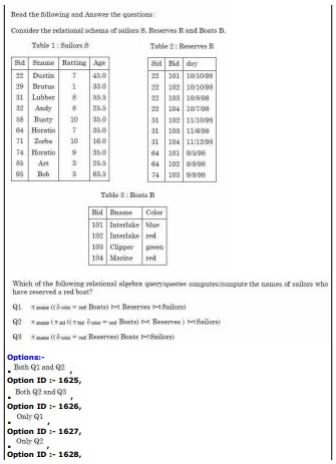
**Option ID :- 1376,**

The process to gather the software requirements from client, analyze and document is known as -

A. Software Engineering Process
B. User Engineering Process
C. Requirement Elicitation Process
D. Requirement Engineering Process

ugcnetcse-oct2022-paper1

## 32.0.43 UGC NET CSE | October 2022 | Part 1 | Question:: 97 top



Read the following and Answer the questions:

Consider the relational schema of sailors S. Reserves R and Boats B.

Table 1 : Sailors S

| Sid | Sname | Ratting | Age |
|---|---|---|---|
| 22 | Dustin | 7 | 45.0 |
| 29 | Brutus | 1 | 33.0 |
| 31 | Lubber | 8 | 55.5 |
| 32 | Andy | 8 | 25.5 |
| 58 | Rusty | 10 | 35.0 |
| 64 | Horatio | 7 | 35.0 |
| 71 | Zorba | 10 | 16.0 |
| 74 | Horatio | 9 | 35.0 |
| 85 | Art | 3 | 25.5 |
| 95 | Bob | 3 | 63.5 |

Table 2 : Reserves R

| Sid | Bid | day |
|---|---|---|
| 22 | 101 | 10/10/98 |
| 22 | 102 | 10/10/98 |
| 22 | 103 | 10/8/98 |
| 22 | 104 | 10/7/98 |
| 31 | 102 | 11/10/98 |
| 31 | 103 | 11/6/98 |
| 31 | 104 | 11/12/98 |
| 64 | 101 | 9/5/98 |
| 64 | 102 | 9/8/98 |
| 74 | 103 | 9/8/98 |

Table 3 : Boats B

| Bid | Bname | Color |
|---|---|---|
| 101 | Interlake | blue |
| 102 | Interlake | red |
| 103 | Clipper | green |
| 104 | Marine | red |

Which of the following relational algebra query/queries computes/compute the names of sailors who have reserved a red boat?

Q1. $\pi_{sname}((\bowtie_{color = 'red'} Boats) \bowtie Reserves \bowtie Sailors)$

Q2. $\pi_{sname}(\pi_{sid}((\pi_{bid}\ \bowtie_{color = 'red'} Boats) \bowtie Reserves) \bowtie Sailors)$

Q3. $\pi_{sname}((\bowtie_{color = 'red'} Reserves)\ Boats \bowtie Sailors)$

**Options:-**

- Both Q1 and Q2 ,

**Option ID :- 1625,**

- Both Q2 and Q3 ,

**Option ID :- 1626,**

- Only Q1 ,

**Option ID :- 1627,**

- Only Q2 ,

**Option ID :- 1628,**

Read the following and Answer the Questions:
Consider the relational schema of sailors S. Reserves R and Boats B.

**Table 1: Sailors S**

| *Sid* | *Sname* | *Ratting* | *Age* |
|---|---|---|---|
| 22 | *Dustin* | 7 | 45.0 |
| 29 | *Brutus* | 1 | 33.0 |
| 31 | *Lubber* | 8 | 55.5 |
| 32 | *Andy* | 8 | 25.5 |
| 58 | *Rusty* | 10 | 35.0 |
| 64 | *Horatio* | 7 | 35.0 |
| 71 | *Zorba* | 10 | 16.0 |
| 74 | *Horatio* | 9 | 35.0 |
| 85 | *Art* | 3 | 25.5 |
| 95 | *Bob* | 3 | 63.5 |

**Table 2: Reserves R**

| *sid* | *Bid* | *day* |
|---|---|---|
| 22 | 101 | 10/1098 |
| 22 | 108 | 101098 |
| 22 | 108 | 101898 |
| 22 | 104 | 10/798 |
| 31 | 108 | 11/1098 |
| 31 | 103 | 11/699 |
| 31 | 104 | 11/298 |
| 64 | 101 | 9558 |
| 64 | 102 | 28858 |
| 74 | 103 | 98958 |

**Table 3: Boats B**

| $Bid$ | $Bname$ | $Color$ |
|---|---|---|
| 101 | $Interlake$ | $blue$ |
| 102 | $Interlake$ | $red$ |
| 103 | $Clipper$ | $green$ |
| 104 | $Marine$ | $red$ |

Which of the following relational algebra query/queries computes/compute the name of sailors who have reserved red boat?

Q1 $\pi$ sname (( $\delta_{color}$ = $_{red}$ Boats) $\bowtie$ Reserves $\bowtie$ Sailors)

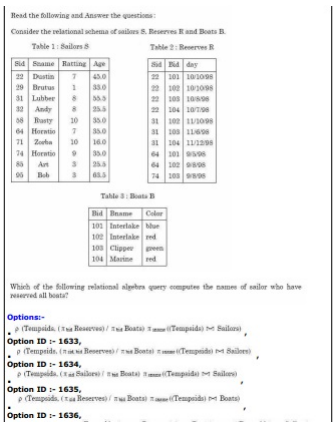
Q2 $\pi$ sname ($\pi_{bid}$ (( $\pi_{bid}$ $\delta_{color}$ = $_{red}Boats$) $\bowtie$ Reserves) $\bowtie$ Sailors)

Q3 $\pi$ sname (( $\delta_{color}$ = $_{red}$ Reserves) Boats $\bowtie$ Sailors)

1. Both Q1 and Q3
2. Both Q2 and Q3
3. Only Q1
4. Only Q2

ugcnetcse-oct2022-paper1

## 32.0.44 UGC NET CSE | October 2022 | Part 1 | Question:: 99 top



Read the following and Answer the questions :

Consider the relational schema of sailors S, Reserves R and Boats B.

Table 1 : Sailors S

| Sid | Sname | Ratting | Age |
|---|---|---|---|
| 22 | Dustin | 7 | 45.0 |
| 29 | Brutus | 1 | 33.0 |
| 31 | Lubber | 8 | 55.5 |
| 32 | Andy | 8 | 25.5 |
| 58 | Rusty | 10 | 35.0 |
| 64 | Horatio | 7 | 35.0 |
| 71 | Zorba | 10 | 16.0 |
| 74 | Horatio | 9 | 35.0 |
| 85 | Art | 3 | 25.5 |
| 95 | Bob | 3 | 63.5 |

Table 2 : Reserves R

| Sid | Bid | day |
|---|---|---|
| 22 | 101 | 10/10/98 |
| 22 | 102 | 10/10/98 |
| 22 | 103 | 10/8/98 |
| 22 | 104 | 10/7/98 |
| 31 | 102 | 11/10/98 |
| 31 | 103 | 11/6/98 |
| 31 | 104 | 11/12/98 |
| 64 | 101 | 9/5/98 |
| 64 | 102 | 9/8/98 |
| 74 | 103 | 9/8/98 |

Table 3 : Boats B

| Bid | Bname | Color |
|---|---|---|
| 101 | Interlake | blue |
| 102 | Interlake | red |
| 103 | Clipper | green |
| 104 | Marine | red |

Which of the following relational algebra query computes the names of sailor who have reserved all boats?

Options:-

$\rho$ (Tempsids, ($\pi_{sid}$ Reserves) / $\pi_{bid}$ Boats) $\pi_{sname}$((Tempsids) $\bowtie$ Sailors)

Option ID :- 1633,

$\rho$ (Tempsids, ($\pi_{sid,bid}$ Reserves) / $\pi_{bid}$ Boats) $\pi_{sname}$((Tempsids) $\bowtie$ Sailors)

Option ID :- 1634,

$\rho$ (Tempsids, ($\pi_{sid}$ Sailors) / $\pi_{bid}$ Boats) $\pi_{sname}$((Tempsids) $\bowtie$ Sailors)

Option ID :- 1635,

$\rho$ (Tempsids, ($\pi_{sid}$ Reserves) / $\pi_{bid}$ Boats) $\pi_{sname}$((Tempsids) $\bowtie$ Boats)

Option ID :- 1636,

Read the following and Answer the questions:

Consider the relational schema of sailors S, Reserves B and Boats B.

**Table 1: Sailors S**

| $Sid$ | $Sname$ | $Ratting$ | $Age$ |
|---|---|---|---|
| 22 | $Dustin$ | 7 | 45.0 |
| 29 | $Brutus$ | 1 | 33.0 |
| 31 | $Lubber$ | 8 | 55.5 |
| 32 | $Andy$ | 8 | 25.5 |
| 58 | $Rusty$ | 10 | 35.0 |
| 64 | $Horatio$ | 7 | 35.0 |
| 71 | $Zorba$ | 10 | 16.0 |
| 74 | $Horatio$ | 9 | 35.0 |
| 85 | $Art$ | 3 | 25.5 |
| 95 | $Bob$ | 3 | 63.5 |

**Table 2: Reserves R**

| *sid* | *Bid* | *day* |
|---|---|---|
| 22 | 101 | 10/1098 |
| 22 | 108 | 101098 |
| 22 | 108 | 101898 |
| 22 | 104 | 10/798 |
| 31 | 108 | 11/1098 |
| 31 | 103 | 11/699 |
| 31 | 104 | 11/298 |
| 64 | 101 | 9558 |
| 64 | 102 | 28858 |
| 74 | 103 | 98958 |

**Table 3: Boats B**

| *Bid* | *Bname* | *Color* |
|---|---|---|
| 101 | *Interlake* | *blue* |
| 102 | *Interlake* | *red* |
| 103 | *Clipper* | *green* |
| 104 | *Marine* | *red* |

Which of the following relational algebra query computes the names of sailor who have reserved all boats?

A. $\rho$ (Tempsids, ( $\pi$ bid Reserves) / $\pi$ bid Boats) $\pi$ sname ((Tempsids) $\bowtie$ Sailors)
B. $\rho$ (Tempsids, ( $\pi$ sid, bid Reserves) / $\pi$ bid Boats) $\pi$ sname ((Tempsids) $\bowtie$ Sailors)
C. $\rho$ (Tempsids. ( $\pi$ sid Sailors) / $\pi$ bid Boats) $\pi$sname ((Tempsids) Sailors)
D. $\rho$ (Tempsids, ( $\pi$ sid Reserves) $/\pi$ bid Boats) $\pi$ sname ((Tempsids) $\bowtie$ Boats)

ugcnetcse-oct2022-paper1

## 32.0.45 UGC NET CSE | December 2004 | Part 2 | Question: 46 top

Data Mining can be used as _____ Tool.

A. Software B. Hardware C. Research D. Process

ugcnetcse-dec2004-paper2

Answer key

## 32.0.46 UGC NET CSE | June 2009 | Part 2 | Question: 37 top

Which of the following changes permission to deny write permission to group and others ?

1. Chmod go-w filex
2. Chmod go w filex
3. Chmod go=w filex
4. None of the above

ugcnetcse-june2009-paper2

## 32.0.47 UGC NET CSE | December 2004 | Part 2 | Question: 50 top

The term *hacker* was originally associated with :

A. A computer program
B. Virus
C. Computer professionals who solved complex computer problems
D. All of the above

ugcnetcse-dec2004-paper2

## 32.0.48 UGC NET CSE | December 2006 | Part 2 | Question: 50 top

The maximum size of SMS in $IS-95$ is _____ octets.

A. $120$
B. $95$
C. $128$
D. $64$

50. The maximum size of SMS in IS-95 is _____ octets.
(A) 120 (B) 95 (C) 128 (D) 64

ugcnetcse-dec2006-paper2

## 32.0.49 UGC NET CSE | October 2022 | Part 1 | Question:: 100 top

Based on the following passage, answer the Questions :

A 3000 km long trunk operates at 1.536 mbps and is used to transmit 64 bytes frames and uses sliding window protocol. The propagation speed is 6 μ sec/km.

The minimum number of bits required in the sequence number field of the packet is

**Options:-**

- 6 bits , **Option ID :- 1645,**
- 7 bits , **Option ID :- 1646,**
- 5 bits , **Option ID :- 1647,**
- 4 bits , **Option ID :- 1648,**

Based on the following passage, answer the Questions :

A $3000\,\mathrm{km}$ long trunk operates at $1.536\mathrm{mbps}$ and is used to transmit 64 bytes frames and uses sliding window protocol. The propagation speed is $6\mu\mathrm{sec/km}$.
The minimum number of bits required in the sequence number field of the packet is

A. $6$ bits
B. $7$ bits
C. $5$ bits
D. $4$ bits

ugcnetcse-oct2022-paper1

Answer key

## 32.0.50 UGC NET CSE | December 2006 | Part 2 | Question: 49 top

Link analysis operation in data mining uses _____ technique.

A. Classification.
B. Association discovery.
C. Visualisation.
D. Neural clustering.

49. Link analysis operation in data mining uses _____ technique.
(A) Classification (B) Association discovery
(C) Visualisation (D) Neural clustering

ugcnetcse-dec2006-paper2

## 32.0.51 UGC NET CSE | October 2022 | Part 1 | Question:: 3 top

Using 'RSA' algorithm, if p = 13, q = 5 and e = 7, the value of d and cipher value of '6' with (e, n) key are

**Options:-**

- 7, 4 ,

**Option ID :- 1329,**

- 7, 1 ,

**Option ID :- 1330,**

- 7,46 ,

**Option ID :- 1331,**

- 55, 1 ,

**Option ID :- 1332,**

Using 'RSA' algorithm, if $p = 13, q = 5$ and $e = 7$. the value of $d$ and cipher value of $'6'$ with $(e, n)$ key are

A. $7,4$ B. $7,1$ C. $7,46$ D. $55,1$

ugcnetcse-oct2022-paper1

## 32.0.52 UGC NET CSE | October 2022 | Part 1 | Question:: 31 top

Alpha and Beta testing are forms of

**Options:-**

- White – Box Testing ,

**Option ID :- 1369,**

- Black – Box Testing ,

**Option ID :- 1370,**

- Acceptance Testing ,

**Option ID :- 1371,**

- System Testing ,

**Option ID :- 1372,**

Alpha and Beta testing are forms of

1. White-Box Testing,
2. Black-Box Testing
3. Acceptance Testing
4. System Testing

ugcnetcse-oct2022-paper1

## 32.0.53 UGC NET CSE | October 2022 | Part 1 | Question:: 5 top

Size and complexity are a part of

**Options:-**

- People Metrics ,

**Option ID :- 1377,**

- Project Metrics ,

**Option ID :- 1378,**

- Process Metrics ,

**Option ID :- 1379,**

- Product Metrics ,

**Option ID :- 1380,**

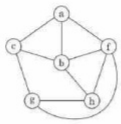
Size and complexity are a part of

A. People Metrics
B. Project Metrics
C. Process Metrics
D. Product Metrics

ugcnetcse-oct2022-paper1

## 32.0.54 UGC NET CSE | October 2022 | Part 1 | Question:: 44 top

Consider the following graph :



For the graph; the following sequences of depth first search (DFS) are given

(A) abcghf

(B) abfchg

(C) abfhgc

(D) afghbc

Which of the following is correct?

**Options:-**

- (A), (B) and (D) only ,

**Option ID :- 1509,**

- (A), (B), (C) and (D) ,

**Option ID :- 1510,**

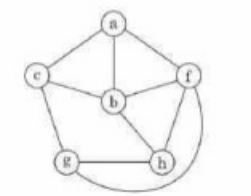
- (B), (C) and (D) only ,

**Option ID :- 1511,**

- (A), (C) and (D) only ,

**Option ID :- 1512,**

Consider the following graph :



For the graph; the following sequences of depth first search (DFS) are given

(A) abcghf

(B) abfchg

(C) abfhgc

(D) afghbc

Which of the following is correct?

A. $(A), (B)$ and $(D)$ only

B. $(A), (B), (C)$ and $(D)$

C. $(B), (C)$ and $(D)$ only

D. $(A), (C)$ and $(D)$ only

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## 32.0.55 UGC NET CSE | October 2022 | Part 1 | Question:: 75 top

Given below are two statements : one is labelled as Assertion (A) and the other is labelled as Reason (R) :

Assertion (A) : $\overline{p}$

Reason (R) : $(r \to \overline{q}, r \vee s, s \to \overline{q}, p \to q)$

In the light of the above statements, choose the correct answer from the options given below :

**Options:-**

- Both (A) and (R) are true and (R) is the correct explanation of (A) ,

**Option ID :- 1597,**

- Both (A) and (R) are true but (R) is NOT the correct explanation of (A) ,

**Option ID :- 1598,**

- (A) is true but (R) is false ,

**Option ID :- 1599,**

- (A) is false but (R) is true ,

**Option ID :- 1600,**

Given below are two statements : one is labelled as Assertion $(A)$ and the other is labelled as Reason $(R)$ :

Assertion $(A)$: $\overline{p}$

Reason $(R)$ : $(r \to \overline{q}, r \vee s, s \to \overline{q}, p \to q)$

In the light of the above statements, choose the correct answer from the options given below :

A. Both $(A)$ and $(R)$ are true and $(R)$ is the correct explanation of $(A)$

B. Both $(A)$ and $(R)$ are true but $(R)$ is $(NOT)$ the correct explanation of $(A)$

C. $(A)$ is true but $(R)$ is false

D. $(\mathrm{A})$ false but $(\mathrm{R})$ is true

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## 32.0.56 UGC NET CSE | October 2022 | Part 1 | Question:: 76 top

Consider the following statements:

Statement I : LALR parser is more powerful than canonical LR Parser.

Statement II : SLR parser is more powerful than LALR

Which of the following is correct?

**Options:-**

- Statement I true and Statement II false ,
**Option ID :- 1581,**
- Statement I false and Statement II true ,
**Option ID :- 1582,**
- Both Statement I and Statement II false ,
**Option ID :- 1583,**
- Both Statement I and Statement II true ,
**Option ID :- 1584,**

Consider the following statements:

**Statement** $\mathrm{I}$: $\mathrm{LALR}$ parser is more powerful than canonical $\mathrm{LR}$ Parser.

**Statement** $\mathrm{II}$: $\mathrm{SLR}$ parser is more powerful than $\mathrm{LALR}$

Which of the following is correct?

A. Statement $\mathrm{I}$ true and Statement $\mathrm{II}$ false
B. Statement $\mathrm{I}$ false and Statement $\mathrm{II}$ true
C. Both Statement $\mathrm{I}$ and Statement $\mathrm{II}$ false
D. Both Statement $\mathrm{I}$ and Statement $\mathrm{II}$ true

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Answer key

## 32.0.57 UGC NET CSE | October 2022 | Part 1 | Question:: 77 top

Consider L = {ab, aa, baa}

Which of the following string is NOT in L*?

**Options:-**

- baaaaabaaaaa ,
**Option ID :- 1317,**
- abaabaaabaa ,
**Option ID :- 1318,**
- aaaabaaaa ,
**Option ID :- 1319,**
- baaaaabaa ,
**Option ID :- 1320,**

Consider $\mathrm{L} = \mathrm{a\,b}, \mathrm{a\,a}, \mathrm{b\,a\,a}$

Which of the following string is $\mathrm{NOT}$ in $\mathrm{L}^*$ ?

A. $\mathrm{baaaaabaaaaa}$ B. $\mathrm{abaabaaabaa}$ C. $\mathrm{aaaabaaaa}$ D. $\mathrm{baaaabaa}$

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## 32.0.58 UGC NET CSE | October 2022 | Part 1 | Question:: 6 top

The solution of the recurrence relation $T(n) = 3T(n/4) + n \lg n$ is

**Options:-**

- $\theta(n^2 \lg n)$ ,

**Option ID :- 1429,**

- $\theta(n \lg n)$ ,

**Option ID :- 1430,**

- $\theta(n \lg n)^2$ ,

**Option ID :- 1431,**

- $\theta(n \lg \lg n)$ ,

**Option ID :- 1432,**

The solution of the recurrence relation $T(n) = 3T(n/4) + n \lg n$ is

A. $\theta(n^2 \lg n)$
B. $\theta(n \lg n)$
C. $\theta(n \lg n)^2$
D. $\theta(n \lg \lg n)$

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## 32.0.59 UGC NET CSE | October 2022 | Part 1 | Question:: 71 top

Which statement is false?

**Options:-**

- All function calls in C pass arguments using call by value. ,

**Option ID :- 1609,**

- Call by reference enables a called function to modify a variable in calling function. ,

**Option ID :- 1610,**

- Call by value is always more efficient than call by reference. ,

**Option ID :- 1611,**

- Programmers use pointers and indirection operation to simulate call by reference. ,

**Option ID :- 1612,**

Which statement is false?

A. All function calls in $\mathrm{C}$ pass arguments using call by value.
B. Call by reference enables a called function to modify a variable in calling function.
C. Call by value is always more efficient than call by reference.
D. Programmers use pointers and indirection operation to simulate call by reference.

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## 32.0.60 UGC NET CSE | October 2022 | Part 1 | Question:: 40 top

The number of gate inputs, required to realize expression $ABC + A\bar{B}CD + E\bar{F} + AD$ is

**Options:-**

- 12 ,

**Option ID :- 1281,**

- 13 ,

**Option ID :- 1282,**

- 14 ,

**Option ID :- 1283,**

- 15 ,

**Option ID :- 1284,**

The number of gate inputs, required to realize expression $\mathrm{A\,B\,C{+}A\,\bar{B}\,C\,D{+}E\,\bar{F}{+}A\,D}$ is

A. $12$
B. $13$
C. $14$
D. $15$

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## 32.0.61 UGC NET CSE | October 2022 | Part 1 | Question:: 61 top

Consider the production rules of grammer G:

S → AbB

A → aAb | λ

B → bB | λ

Which of the following language L is generated by grammer G?

**Options:-**

- $L = \{a^n b^m : n \geq 0, m > n\}$ ,

**Option ID :- 1309,**

- $L = \{a^n b^m : n \geq 0, m \geq 0\}$ ,

**Option ID :- 1310,**

- $L = \{a^n b^m : n \geq m\}$ ,

**Option ID :- 1311,**

- $L = \{a^n b^m : n \geq m, m > 0\}$ ,

**Option ID :- 1312,**

Consider the production rules of grammar G:

$$\begin{aligned} &\mathrm{S} \rightarrow \mathrm{AbB} \\ &\mathrm{A} \rightarrow \mathrm{aAb} \mid \lambda \\ &\mathrm{B} \rightarrow \mathrm{bB} \mid \lambda \end{aligned}$$

Which of the following language $L$ is generated by grammer $G$ ?

A. $\mathrm{L} = \{a^n b^m : n \geq 0, m > n\}$
B. $\mathrm{L} = \{a^n b^m : n \geq 0, m \geq 0\}$
C. $L = \{a^n b^m : n \geq m\}$
D. $L = \{a^n b^m : n \geq m, m > 0\}$

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## 32.0.62 UGC NET CSE | October 2022 | Part 1 | Question:: 58 top

A trigger is

**Options:-**

- A statement that enables to start DBMS. ,

**Option ID :- 1465,**

- A statement that is executed by the user when debugging an application program. ,

**Option ID :- 1466,**

- A condition the system tests for the validity of the database user. ,

**Option ID :- 1467,**

- A statement that is executed automatically by the system as a side effect of modification to the database. ,

**Option ID :- 1468,**

A trigger is

A. A statement that enables to start $\mathrm{DBMS}$
B. A statement that is executed by the user when debugging an application program.
C. A condition the system tests for the validity of the database user.
D. A statement that is executed automatically by the system as a side effect of modification to the database.

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## 32.0.63 UGC NET CSE | October 2022 | Part 1 | Question:: 42 top

Which one is a connectionless transport – layer protocol that belongs to the Internet protocol family?

**Options:-**

- Transmission Control Protocol (TCP) ,

**Option ID :- 1401,**

- User Datagram Protocol (UDP) ,

**Option ID :- 1402,**

- Routing Protocol (RP) ,

**Option ID :- 1403,**

- Datagram Control Protocol (DCP) ,

**Option ID :- 1404,**

Which one is a connectionless transport - layer protocol that belongs to the Internet protocol family?

A. Transmission Control Protocol (TCP)
B. User Datagram Protocol (UDP)
C. Routing Protocol (RP)
D. Datagram Control Protocol (DCP),

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## 32.0.64 UGC NET CSE | October 2022 | Part 1 | Question:: 43 top

Hidden surface removal problem with minimal 3D pipeline can be solved with

**Options:-**

- Painter's algorithm ,

**Option ID :- 1325,**

- Window Clipping algorithm ,

**Option ID :- 1326,**

- Brute force rasterization algorithm ,

**Option ID :- 1327,**

- Flood fill algorithm ,

**Option ID :- 1328,**

Hidden surface removal problem with minimal $3D$ pipeline can be solved with

A. Painter's algorithm
B. Window Clipping algorithm
C. Brute force rasterization algorithm
D. Flood fill algorithm

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Answer key

## 32.0.65 UGC NET CSE | October 2022 | Part 1 | Question:: 45 top

Match List I with List II :

| | List I | | List II |
|---|---|---|---|
| (A) | Type 0 | (I) | Finite automata |
| (B) | Type 1 | (II) | Tuning machine |
| (C) | Type 2 | (III) | Linear bound automata |
| (D) | Type 3 | (IV) | Pushdown automata |

Choose the correct answer from the options given below :

**Options:-**

- (A)-(III), (B)-(IV), (C)-(II), (D)-(I) ,

**Option ID :- 1529,**

- (A)-(II), (B)-(III), (C)-(IV), (D)-(I) ,

**Option ID :- 1530,**

- (A)-(III), (B)-(IV), (C)-(I), (D)-(II) ,

**Option ID :- 1531,**

- (A)-(II), (B)-(III), (C)-(II), (D)-(IV) ,

**Option ID :- 1532,**

Match **List I** with **List II :**

| List I | List II |
|---|---|
| (A) Type $0$ | (I) Finite automata |
| (B) Type $1$ | (II) Tuning machine |
| (C) Type $2$ | (III) Linear bound automata |
| (D) Type $3$ | (IV) Pushdown automata |

Choose the correct answer from the options given below :

A. $(\mathrm{A}) - (\mathrm{III}), (\mathrm{B}) - (\mathrm{IV}), (\mathrm{C}) - (\mathrm{II}), (\mathrm{D}) - (\mathrm{I})$
B. $(\mathrm{A}) - (\mathrm{II}), (\mathrm{B}) - (\mathrm{III}), (\mathrm{C}) - (\mathrm{IV}), (\mathrm{D}) - (\mathrm{I})$
C. $(\mathrm{A}) - (\mathrm{III}), (\mathrm{B}) - (\mathrm{IV}), (\mathrm{C}) - (\mathrm{I}), (\mathrm{D}) - (\mathrm{II})$
D. $(\mathrm{A}) - (\mathrm{II}), (\mathrm{B}) - (\mathrm{III}), (\mathrm{C}) - (\mathrm{II}), (\mathrm{D}) - (\mathrm{IV})$

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Answer key

## 32.0.66 UGC NET CSE | October 2022 | Part 1 | Question:: 72 top

Consider the following:

| List I | | List II | |
|---|---|---|---|
| (A) | Stack algorithm | (I) | Deadlock |
| (B) | Elevator algorithm | (II) | Disk scheduling |
| (C) | Priority scheduling algorithm | (III) | Page replacement |
| (D) | Havender's algorithm | (IV) | CPU scheduling |

Which of the following is correct matching?

**Options:-**

- (A)-(III), (B)-(II), (C)-(IV), (D)-(I)

**Option ID :- 1561,**

- (A)-(II), (B)-(III), (C)-(IV), (D)-(I)

**Option ID :- 1562,**

- (A)-(III), (B)-(II), (C)-(I), (D)-(IV)

**Option ID :- 1563,**

- (A)-(II), (B)-(III), (C)-(I), (D)-(IV)

Consider the following:

| List I | List II |
|---|---|
| (A) Stack algorithm | (I) Deadlock |
| (B) Elevator algorithm | (II) Disk scheduling |
| (C) Priority scheduling algorithm | (III) Page replacement |
| (D) Havender's algorithm | (IV) CPU scheduling |

Which of the following is correct matching?

A. (A)-(III), (B)-(II), (C)-(IV), (D)-(I)
B. (A)-(II), (B)-(III), (C)-(IV), (D)-(I)
C. (A)-(III), (B)-(II), (C)-(I), (D)-(IV)
D. (A)-(II), (B)-(III), (C)-(I), (D)-(IV)

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## 32.0.67 UGC NET CSE | October 2022 | Part 1 | Question:: 46 top

A top down approach to programming calls for :

Statement I : Working from the general to the specific.

Statement II : Postpone the minor decisions.

Statement III : A systematic approach.

Statement IV : Intermediate coding of the problem

Which of the following is true?

**Options:-**

- Statement I only

**Option ID :- 1577,**

- Statement I and Statement II only

**Option ID :- 1578,**

- Statement I, Statement II and Statement III only

**Option ID :- 1579,**

- Statement I, Statement II and Statement IV only

**Option ID :- 1580,**

A top down approach to programming calls for :

**Statement I:** Working from the general to the specific.
**Statement II:** Postpone the minor decisions.
**Statement III:** A systematic approach.
**Statement IV:** Intermediate coding of the problem

Which of the following is true?

A. Statement I only
B. Statement I and Statement II only
C. Statement I, Statement II and Statement III only
D. Statement I, Statement II and Statement IV only

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## 32.0.68 UGC NET CSE | October 2022 | Part 1 | Question:: 47 top

In a database, a rule is defined as (P1 and P2) or P3? R1 (0.8) and R2 (0.3), where P1, P2, P3 are premises and R1, R2 are conclusions of rules with certainty factors (CF) 0.8 and 0.3 respectively. If any running program has produced P1, P2, P3 with CF as 0.5, 0.8, 0.2 respectively, find the CF of results on the basis of premises.

**Options:-**

- CF (R1 = 0.8), CF (R2 = 0.3) ,

**Option ID :- 1261,**

- CF (R1 = 0.40), CF (R2 = 0.15) ,

**Option ID :- 1262,**

- CF (R1 = 0.15), CF (R2 = 0.35) ,

**Option ID :- 1263,**

- CF (R1 = 0.8), CF (R2 = 0.35) ,

**Option ID :- 1264,**

In a database, a rule is defined as $(\mathrm{P1}$ and $\mathrm{P2})$ or $\mathrm{P3}$ ? $\mathrm{R1}(0.8)$ and $\mathrm{R2}(0.3)$, where $\mathrm{P1}$, $\mathrm{P2}$. $\mathrm{P3}$ are premises and $\mathrm{R1}$. $\mathrm{R2}$ are conclusions of rules with certainty factors $(\mathrm{CF})$ $0.8$ and $0.3$ respectively. If any running program has produced $\mathrm{P1}$, $\mathrm{P2}$, $\mathrm{P3}$ with $\mathrm{CF}$ as $0.5, 0.8, 0.2$ respectively. find the $\mathrm{CF}$ of results on the basis of premises.

A. $\mathrm{CF}(\mathrm{R1}=0.8), \mathrm{CF}(\mathrm{R2}=0.3)$
B. $\mathrm{CF}(\mathrm{R1}=0.40), \mathrm{CF}(\mathrm{R2}=0.15)$
C. $\mathrm{CF}(\mathrm{R1}=0.15), \mathrm{CF}(\mathrm{R2}=0.35)$
D. $\mathrm{CF}(\mathrm{R1}=0.8), \mathrm{CF}(\mathrm{R2}=0.35)$

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## 32.0.69 UGC NET CSE | October 2022 | Part 1 | Question:: 48 top

Pointers cannot be used to

**Options:-**

- find the address of a variable in memory ,

**Option ID :- 1337,**

- reference value directly ,

**Option ID :- 1338,**

- simulate call by reference ,

**Option ID :- 1339,**

- manipulate dynamic data structure ,

**Option ID :- 1340,**

Pointers cannot be used to

A. find the address of a variable in memory
B. reference value directly
C. simulate call by reference
D. manipulate dynamic data structure

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## 32.0.70 UGC NET CSE | October 2022 | Part 1 | Question:: 102 top

Based on the following passage, answer the Questions :

A 3000 km long trunk operates at 1.536 mbps and is used to transmit 64 bytes frames and uses sliding window protocol. The propagation speed is 6 μ sec/km.

The maximum achievable throughput is

**Options:-**

- 0.768 ,

**Option ID :- 1657,**

- 0.678 ,

**Option ID :- 1658,**

- 0.901 ,

**Option ID :- 1659,**

- 0.887 ,

**Option ID :- 1660,**

Based on the following passage, answer the Questions :

A $3000\ \mathrm{km}$ long trunk operates at $1.536\mathrm{mbps}$ and is used to transmit 64 bytes frames and uses sliding window protocol. The propagation speed is $6\mu\mathrm{sec}/\mathrm{km}$.

The maximum achievable throughput is

A. $0.768$
B. $0.678$
C. $0.901$
D. $0.887$

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## 32.0.71 UGC NET CSE | October 2022 | Part 1 | Question:: 49 top

If an operating system does not allow a child process to exist when the parent process has been terminated, this phenomenon is called as -

**Options:-**

- Threading ,
**Option ID :- 1345,**
- Cascading termination ,
**Option ID :- 1346,**
- Zombie termination ,
**Option ID :- 1347,**
- Process killing ,
**Option ID :- 1348,**

If an operating system does not allow a child process to exist when the parent process has been terminated, this phenomenon is called as.

A. Threading
B. Cascading termination
C. Zombie termination
D. Process killing

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## 32.0.72 UGC NET CSE | October 2022 | Part 1 | Question:: 51 top

Consider a logic gate circuit, with 8 input lines ($D_0$, $D_1$ ..... $D_7$) and 3 output lines ($A_0$, $A_1$, $A_2$) specified by following operations

$$A_2 = D_4 + D_5 + D_6 + D_7$$
$$A_1 = D_2 + D_3 + D_6 + D_7$$
$$A_0 = D_1 + D_3 + D_5 + D_0$$

Where + indicates logical OR operation. This circuit is

**Options:-**

- $3 \times 8$ multiplexer ,
**Option ID :- 1285,**
- Decimal to BCD converter ,
**Option ID :- 1286,**
- Octal to Binary encoder ,
**Option ID :- 1287,**
- Priority encoder ,
**Option ID :- 1288,**

Consider a logic gate circuit, with 8 input lines $(\mathrm{D}_0, \mathrm{D}_1 \ldots\ldots \mathrm{D}_7)$ and 3 output lines $(\mathrm{A}_0,\ \mathrm{A}_1,\ \mathrm{A}_2)$ specified by following operations

$$A_2 = D_4 + D_5 + D_6 + D_7$$
$$A_1 = D_2 + D_3 + D_6 + D_7$$
$$A_0 = D_1 + D_3 + D_5 + D_0$$

Where $+$ indicates logical $\mathrm{OR}$ operation. This circuit is

A. $3 \times 8$ multiplexer
B. Decimal to $\mathrm{BCD}$ converter
C. Octal to Binary encoder
D. Priority encoder

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## 32.0.73 UGC NET CSE | October 2022 | Part 1 | Question:: 52 top

Consider the following statements:

Statement I : Composite attributes cannot be divided into smaller subparts.

Statement II : Complex attribute is formed by nesting composite attributes and multi-valued attributes in an arbitrary way.

Statement III : A derived attribute is an attribute whose values are computed from other attribute.

Which of the following is correct?

**Options:-**

- Statement I, Statement II and Statement III are true ,

**Option ID :- 1573,**

- Statement I true and Statement II, Statement III false ,

**Option ID :- 1574,**

- Statement I, Statement II true and Statement III false ,

**Option ID :- 1575,**

- Statement I false and Statement II, Statement III true

Consider the following statements:

**Statement I:** Composite attributes cannot be divided into smaller subparts.

**Statement II:** Complex attribute is formed by nesting composite attributes and multivalued attributes in an arbitrary way.

**Statement III:** A derived attribute is an attribute whose values are computed from other attribute.

Which of the following is correct?

A. Statement I, Statement II and Statement III are true
B. Statement I true and Statement II, Statement III false
C. Statement I, Statement II true and Statement III false
D. Statement I false and Statement II, Statement III true

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## 32.0.74 UGC NET CSE | October 2022 | Part 1 | Question:: 54 top

In a cache memory, if address has 9 bits in Tag field and 12 bits in index field, the size of main memory and cache memory would be respectively

**Options:-**

- 2 K, 4 K ,

**Option ID :- 1293,**

- 1024 K, 2 K ,

**Option ID :- 1294,**

- 4 K, 2048 K ,

**Option ID :- 1295,**

- 2048 K, 4 K ,

**Option ID :- 1296,**

In a cache memory, if address has $9$ bits in Tag field and $12$ bits in index field, the size of main memory and cache memory would be respectively

A. $2\,\mathrm{K}.4\,\mathrm{K}4$
B. $1024\,\mathrm{K}, 2\,\mathrm{K},$
C. $4\,\mathrm{K}, 2048\,\mathrm{K}$
D. $2048\,\mathrm{K}, 4\,\mathrm{K}$

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## 32.0.75 UGC NET CSE | October 2022 | Part 1 | Question:: 101 top

Based on the following passage, answer the Questions :

A 3000 km long trunk operates at 1.536 mbps and is used to transmit 64 bytes frames and uses sliding window protocol. The propagation speed is 6 μ sec/km.

If only 6 bits are reserved for sequence number field, then the efficiency of the system is

**Options:-**

- 0.587 ,

**Option ID :- 1653,**

- 0.875 ,

**Option ID :- 1654,**

- 0.578 ,

**Option ID :- 1655,**

- 0.50 ,

**Option ID :- 1656,**

Based on the following passage, answer the Questions:

A $3000\,\mathrm{km}$ long trunk operates at $1.536\mathrm{mbps}$ and is used to transmit 64 bytes frames and uses sliding window protocol. The propagation speed is $6\mu\mathrm{sec}/\mathrm{km}$.
If only 6 bits are reserved for sequence number field, then the efficiency of the system is

A. $0.587$ B. $0.875$ C. $0.578$ D. $0.50$

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## 32.0.76 UGC NET CSE | October 2022 | Part 1 | Question:: 57 top

Given below are two statements : one is labelled as Assertion (A) and the other is labelled as Reason (R) :

Assertion (A) : A load-and-go assembler avoids the overhead of writing the object program out and reading it back in.

Reason (R) : This can be done with either one-pass or two pass assembler.

In the light of the above statements, choose the correct answer from the options given below :

**Options:-**

- Both (A) and (R) are true and (R) is the correct explanation of (A) ,

**Option ID :- 1605,**

- Both (A) and (R) are true but (R) is NOT the correct explanation of (A) ,

**Option ID :- 1606,**

- (A) is true but (R) is false ,

**Option ID :- 1607,**

- (A) is false but (R) is true ,

**Option ID :- 1608,**

Given below are two statements : one is labelled as Assertion $(\mathrm{A})$ and the other is labelled as Reason $(\mathrm{R})$:

**Assertion** $(\mathrm{A})$: A load-and-go assembler avoids the overhead of writing the object program out and reading it back in.
**Reason** $(\mathrm{R})$: This can be done with either one-pass or two pass assembler.
In the light of the above statements, choose the correct answer from the options given below :

A. Both $(\mathrm{A})$ and $(\mathrm{R})$ are true and $(\mathrm{R})$ is the correct explanation of $(\mathrm{A})$,
B. Both $(\mathrm{A})$ and $(\mathrm{R})$ are true but $(\mathrm{R})$ is $(\mathrm{NOT})$ the correct explanation of $(\mathrm{A})$
C. $(\mathrm{A})$ is true but $(\mathrm{R})$ is false
D. $(\mathrm{A})$ is false but $(\mathrm{R})$ is true

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## 32.0.77 UGC NET CSE | October 2022 | Part 1 | Question:: 73 top

Match List I with List II :

| List I | | List II | |
|---|---|---|---|
| (A) | Physical layer | (I) | Routing of the signals divide the outgoing message into packets, to act as network controller for routing data |
| (B) | Data link layer | (II) | Make and break connections, define voltages and data rates, convert data bits into electrical signal |
| (C) | Network layer | (III) | Synchronization, error detection and correction. To assemble outgoing message into frames. |
| (D) | Presentation layer | (IV) | It works as a translating layer |

Choose the correct answer from the options given below :

**Options:-**

- (A)-(IV), (B)-(III), (C)-(II), (D)-(I) ,

**Option ID :- 1553,**

- (A)-(II), (B)-(III), (C)-(IV), (D)-(I) ,

**Option ID :- 1554,**

- (A)-(IV), (B)-(III), (C)-(I), (D)-(II) ,

**Option ID :- 1555,**

- (A)-(II), (B)-(III), (C)-(I), (D)-(IV) ,

Match List I with List II:

| List I | List II |
|---|---|
| (A) Physical layer | (I) Routing of the signals divide the outgoing message into packets, to act as network controller for routing data |
| (B) Data link layer | (II) Make and break connections, define voltages and data rates convert data bits into electrical signal |
| (C) Network layer | (III) Synchronization, error detection and correction. To assemble outgoing message into frames |
| (D) Presentation layer | (IV) It works as a translating layer |

Choose the correct answer from the options given below :

A. (A)-(IV), (B)-(III), (C)-(II), (D)-(I)
B. (A)-(II), (B)-(III). (C)-(IV), (D)-(I)
C. (A)-(IV), (B)-(III), (C)-(I), (D)-(II)
D. (A)-(II), (B)-(III), (C)-(I), (D)-(IV)

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## 32.0.78 UGC NET CSE | October 2022 | Part 1 | Question:: 85 top

Consider $\alpha, \beta, \gamma$ as logical variables. Identify which of the following represents correct logical equivalence :

(A) $(\alpha \wedge (\beta \vee \gamma)) \equiv ((\alpha \wedge \beta) \vee (\alpha \wedge \gamma))$

(B) $(\alpha \vee \beta) \equiv -\alpha \vee \beta$

(C) $(\alpha \Rightarrow \beta) \equiv (-\beta \Rightarrow -\alpha)$

(D) $(-(\alpha \vee \beta)) \equiv (-\alpha \Rightarrow -\beta)$

Choose the correct answer from the options given below :

**Options:-**

- (A) and (D) only ,

**Option ID :- 1501,**

- (B) and (C) only ,

**Option ID :- 1502,**

- (A) and (C) only ,

**Option ID :- 1503,**

- (B) and (D) only

Consider $\alpha, \beta, \gamma$ as logical variables. Identify which of the following represents correct logical equivalence :

(A) $(\alpha \wedge (\beta \vee \gamma)) \equiv ((\alpha \wedge \beta) \vee (\alpha \wedge \gamma))$

(B) $(\alpha \vee \beta) \equiv -\alpha \vee \beta$

(C) $(\alpha \Rightarrow \beta) \equiv (-\beta \Rightarrow -\alpha)$

(D) $(-(\alpha \vee \beta)) \equiv (\neg\alpha \Rightarrow -\beta)$

Choose the correct answer from the options given below :

A. (A) and (D) only
B. (B) and (C) only,
C. (A) and (C) only
D. (B) and (D) only

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## 32.0.79 UGC NET CSE | October 2022 | Part 1 | Question:: 41 top

Let $(\{a,b\},*)$ be a semigroup, where $a*a=b$.

(A) $a*b=b*a$

(B) $b*b=b$

Choose the most appropriate answer from the options given below :

**Options:-**

- (A) only true,

**Option ID :- 1505,**

- (B) only true,

**Option ID :- 1506,**

- Both (A) and (B) true,

**Option ID :- 1507,**

- Neither (A) nor (B) true,

**Option ID :- 1508,**

Let $(\{a,b\},*)$ be a semigroup, where $a*a=b$.
(A) $a*b=b*a$
(B) $b*b=b$
Choose the most appropriate answer from the options given below :

A. $(\mathrm{A})$ only true
B. $(\mathrm{B})$ only true
C. Both $(\mathrm{A})$ and $(\mathrm{B})$ true,
D. Neither $(\mathrm{A})$ nor $(\mathrm{B})$ true,

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## 32.0.80 UGC NET CSE | October 2022 | Part 1 | Question:: 63 top

How many rotations are required during the construction of an AVL tree if the following elements are to be added in the given sequence?

35, 50, 40, 25, 30, 60, 78, 20, 28

**Options:-**

- 2 left rotations, 2 right rotations,

**Option ID :- 1453,**

- 2 left rotations, 3 right rotations,

**Option ID :- 1454,**

- 3 left rotations, 2 right rotations,

**Option ID :- 1455,**

- 3 left rotations, 1 right rotation,

**Option ID :- 1456,**

How many rotations are required during the construction of an $\mathrm{AVL}$ tree if the following elements are to be added in the given sequence?

$35, 50, 40, 25, 30, 60, 78, 20, 28$

A. $2$ left rotations, $2$ right rotations
B. $2$ left rotations, $3$ right rotations
C. $3$ left rotations, $2$ right rotations
D. $3$ left rotations, $1$ right rotation

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## 32.0.81 UGC NET CSE | October 2022 | Part 1 | Question:: 39 top

There are three boxes. First box has 2 white, 3 black and 4 red balls. Second box has 3 white, 2 black and 2 red balls. Third box has 4 white, 1 black and 3 red balls. A box is chosen at random and 2 balls are drawn out of which 1 is white, and 1 is red. What is the probability that the balls came from first box?

**Options:-**

- 0.237,

**Option ID :- 1265,**

- 0.723,

**Option ID :- 1266,**

- 0.18,

**Option ID :- 1267,**

- 0.452,

**Option ID :- 1268,**

There are three boxes. First box has $2$ white, $3$ black and $4$ red balls. Second box has $3$ white, $2$ black and $2$ red balls. Third box has $4$ white, $1$ black and $3$ red balls. A box is chosen at random and $2$ balls are drawn out of which $1$ is white, and 1 is red. What is the probability that the balls came from first box?

A. $0.237$
B. $0.723$
C. $0.18$
D. $0.452$

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## 32.0.82 UGC NET CSE | October 2022 | Part 1 | Question:: 79 top

The reduced grammar equivalent to the grammar, whose production rules are given below, is

$S \to AB \mid CA$

$B \to BC \mid AB$

$A \to a$

$C \to a\,B \mid b$

**Options:-**

- $S \to CA, A \to a, C \to b$ ,

**Option ID :- 1305,**

- $S \to CA \mid B, B \to BC \mid B, A \to a, C \to aB \mid b$ ,

**Option ID :- 1306,**

- $S \to CA \mid B, B \to BC, A \to a, C \to aB \mid b$ ,

**Option ID :- 1307,**

- $S \to AB \mid AC, B \to BC \mid BA, A \to a, C \to aB \mid b$ ,

**Option ID :- 1308,**

The reduced grammar equivalent to the grammar, whose production rules are given below, is

$$S \to AB \mid CA$$
$$B \to BC \mid AB$$
$$A \to a$$
$$C \to aB \mid b$$

A. $S \to CA, A \to a, C \to b$
B. $S \to CA|B, B \to BC|B, A \to a, C \to aB \mid b$
C. $S \to CA|B, B \to BC, A \to a, C \to aB|b$
D. $S \to AB|AC, B \to BC|BA, A \to a, C \to aB \mid b$

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## 32.0.83 UGC NET CSE | October 2022 | Part 1 | Question:: 11 top

In reference to Big data, consider the following database :

(A) Memcached

(B) Couch DB

(C) Infinite graph

Choose the most appropriate answer from the options given below :

**Options:-**

- (A) and (B) only ,

**Option ID :- 1517,**

- (B) and (C) only ,

**Option ID :- 1518,**

- (C) and (A) only ,

**Option ID :- 1519,**

- (A), (B) and (C) ,

**Option ID :- 1520,**

In reference to Big data, consider the following database :
(A) Memcached
(B) Couch $\mathrm{DB}$
(C) Infinite graph
Choose the most appropriate answer from the options given below :

A. $(A)$ and $(B)$ only
B. $(B)$ and $(C)$ only,
C. $(C)$ and $(A)$ only
D. $(A)$ $(B)$ and $(C)$

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## 32.0.84 UGC NET CSE | October 2022 | Part 1 | Question:: 17 top

A classless address is given as 167.199.170.82/27. The number of addresses in the network is

**Options:-**

- 64 addresses ,

**Option ID :- 1409,**

- 32 addresses ,

**Option ID :- 1410,**

- 28 addresses ,

**Option ID :- 1411,**

- 30 addresses ,

**Option ID :- 1412,**

A classless address is given as $167.199.170.82/27$. The number of addresses in the network is

A. $64$ addresses B. $32$ addresses C. $28$ addresses D. $30$ addresses

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## 32.0.85 UGC NET CSE | October 2022 | Part 1 | Question:: 16 top

Fault base testing technique is

**Options:-**

- Unit testing ,

**Option ID :- 1365,**

- Beta testing ,

**Option ID :- 1366,**

- Stress testing ,

**Option ID :- 1367,**

- Mutation testing ,

**Option ID :- 1368,**

Fault base testing technique is

A. Unit testing
B. Beta testing,
C. Stress testing
D. Mutation testing

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## 32.0.86 UGC NET CSE | October 2022 | Part 1 | Question:: 15 top

Assume that $f(n)$ and $g(n)$ are asymptotically positive. Which of the following is correct?

**Options:-**

- $f(n)=O(g(n))$ and $g(n)=O(h(n)) \Rightarrow f(n)=\omega(h(n))$ ,

**Option ID :- 1425,**

- $f(n)=\Omega(g(n))$ and $g(n)=\Omega(h(n)) \Rightarrow f(n)=O(h(n))$ ,

**Option ID :- 1426,**

- $f(n)=o(g(n))$ and $g(n)=o(h(n)) \Rightarrow f(n)=o(h(n))$ ,

**Option ID :- 1427,**

- $f(n)=\omega(g(n))$ and $g(n)=\omega(h(n)) \Rightarrow f(n)=\Omega(h(n))$ ,

**Option ID :- 1428,**

Assume that $f(n)$ and $g(n)$ are asymptotically positive. Which of the following is correct?

A. $f(n)=O(g(n))$ and $g(n)=O(h(n)) \Rightarrow f(n)=\omega(h(n))$
B. $f(n)=\Omega(g(n))$ and $g(n)=\Omega(h(n)) \Rightarrow f(n)=O(h(n))$
C. $f(n)=o(g(n))$ and $g(n)=o(h(n)) \Rightarrow f(n)=o(h(n))$
D. $f(n)=\omega(g(n))$ and $g(n)=\omega(h(n)) \Rightarrow f(n)=\Omega(h(n))$

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## 32.0.87 UGC NET CSE | October 2022 | Part 1 | Question:: 14 top

Which Metrics are derived by normalizing quality and/or productivity measures by considering the size of the software that has been produced?

**Options:-**

- Function – Oriented Metrics ,

**Option ID :- 1381,**

- Function – Point Metrics ,

**Option ID :- 1382,**

- Line of Code Metrics ,

**Option ID :- 1383,**

- Size Oriented Metrics ,

**Option ID :- 1384,**

Which Metrics are derived by normalizing quality and/or productivity measures by considering the size of the software that has been produced?

A. Function - Oriented Metrics
B. Function - Point Metrics
C. Line of Code Metrics
D. Size Oriented Metrics

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## 32.0.88 UGC NET CSE | October 2022 | Part 1 | Question:: 64 top

Match List I with List II :

| | List I | | List II |
|---|---|---|---|
| (A) | BIND | (I) | Block the caller until a connection attempt arrives |
| (B) | LISTEN | (II) | Give a local address to a socket |
| (C) | ACCEPT | (III) | Show willingness to accept connections |
| (D) | SOCKET | (IV) | Create a new point |

Choose the correct answer from the options given below :

**Options:-**

- (A)-(I), (B)-(III), (C)-(II), (D)-(IV) ,

**Option ID :- 1549,**

- (A)-(II), (B)-(III), (C)-(I), (D)-(IV) ,

**Option ID :- 1550,**

- (A)-(III), (B)-(II), (C)-(I), (D)-(IV) ,

**Option ID :- 1551,**

- (A)-(I), (B)-(II), (C)-(III), (D)-(IV) ,

**Option ID :- 1552,**

Match List I with List II :

| List I | List II |
|---|---|
| (A) BIND | (I) Block the caller until a connection attempt arrives |
| (B) LISTEN | (II) Give a local address to a socket |
| (C) ACCEPT | (III) Show willingness to accept connections |
| (D) SOCKET | (IV) Create a new point |

Choose the correct answer from the options given below :

A. (A)-(I), (B)-(III), (C)-(II), (D)-(IV)
B. (A)-(II), (B)-(III). (C)-(I), (D)-(IV)
C. (A)-(III), (B)-(II), (C)-(I), (D)-(IV)
D. (A)-(I), (B)-(II), (C)-(III), (D)-(IV)

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## 32.0.89 UGC NET CSE | October 2022 | Part 1 | Question:: 103 top

Based on the following passage, answer the Questions :

A 3000 km long trunk operates at 1.536 mbps and is used to transmit 64 bytes frames and uses sliding window protocol. The propagation speed is 6 μ sec/km.

The transmission and propagation delays are respectively

**Options:-**

- $T_t$ = 333.33 μ sec, $T_p$ = 18000 μ sec ,

**Option ID :- 1641,**

- $T_t$ = 300 μ sec, $T_p$ = 15360 μ sec ,

**Option ID :- 1642,**

- $T_t$ = 33.33 μ sec, $T_p$ = 1800 μ sec ,

**Option ID :- 1643,**

- $T_t$ = 1800 μ sec, $T_p$ = 33.33 μ sec ,

**Option ID :- 1644,**

Based on the following passage, answer the Questions :

A $3000\ \mathrm{km}$ long trunk operates at $1.536\mathrm{mbps}$ and is used to transmit 64 bytes frames and uses sliding window protocol. The propagation speed is $6\mu\mathrm{sec}/\mathrm{km}$.
The transmission and propagation delays are respectively

A. $\mathrm{T_t} = 333.33\mu\mathrm{sec}, \mathrm{T_p} = 18000\mu\mathrm{sec}$
B. $T_t = 300\mu\mathrm{sec}, T_p = 15360\mu\mathrm{sec}$
C. $\mathrm{T_t} = 33.33\mu\mathrm{sec}, \mathrm{T_p} = 1800\mu\mathrm{sec}$
D. $T_\mathrm{t} = 1800\mu\mathrm{sec}, T_\mathrm{P} = 33.33\mu\mathrm{sec}$

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Answer key

## 32.0.90 UGC NET CSE | October 2022 | Part 1 | Question:: 12 top

Consider the hash table of size 11 that uses open addressing with linear probing. Let $h(k) = k\ mod\ 11$ be the hash function. A sequence of records with keys 43, 36, 92, 87, 11, 47, 11, 13, 14 is inserted into an initially empty hash table, the bins of which are indexed from 0 to 10. What is the index of the bin into which the last record is inserted?

**Options:-**

- 8 ,

**Option ID :- 1445,**

- 7 ,

**Option ID :- 1446,**

- 10 ,

**Option ID :- 1447,**

- 4 ,

**Option ID :- 1448,**

Consider the hash table of size $11$ that uses open addressing with linear probing. Let $h(k) = k \bmod 11$ be the hash function. A sequence of records with keys $43, 36, 92, 87.11.47.11, 13, 14$ is inserted into an initially empty hash table, the bins of which are indexed from $0$ to $10$. What is the index of the bin into which the last record is inserted?

A. $8$ B. $7$ C. $10$ D. $4$

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## 32.0.91 UGC NET CSE | October 2022 | Part 1 | Question:: 10 top

Consider the following statements:

Statement I : Conservative 2 PL is a deadlock-free protocol.

Statement II : Thomas's write rule enforces conflict serializability.

Statement III : Timestamp ordering protocol ensures serializability based on the order of transaction timestamps.

Which of the following is correct?

**Options:-**

- Statement I, Statement II true and Statement III false ,

**Option ID :- 1569,**

- Statement I, Statement III true and Statement II false ,

**Option ID :- 1570,**

- Statement I, Statement II false and Statement III true ,

**Option ID :- 1571,**

- Statement I, Statement II and Statement III true ,

Consider the following statements:
Statement $I$: Conservative $2\mathrm{PL}$ is a deadlock-free protocol.
Statement $II$: Thomas's write rule enforces conflict serializability.
Statement $III$: Timestamp ordering protocol ensures serializability based on the order of transaction timestamps.
Which of the following is correct?

A. Statement $I$, Statement $II$ true and Statement $III$ false
B. Statement $I$, Statement $III$ true and Statement $II$ false
C. Statement $I$, Statement $II$ false and Statement $III$ true
D. Statement $I$, Statement $II$ and Statement $III$ true

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## 32.0.92 UGC NET CSE | October 2022 | Part 1 | Question:: 65 top

This transformation is called

$$\begin{bmatrix} \bar{x} \\ \bar{y} \\ \bar{z} \\ \bar{w} \end{bmatrix} = \begin{bmatrix} a_1 & b_1 & c_1 & d_1 \\ a_2 & b_2 & c_2 & d_2 \\ a_3 & b_3 & c_3 & d_3 \\ e & f & g & h \end{bmatrix} - \begin{bmatrix} x \\ y \\ z \\ 1 \end{bmatrix}$$

**Options:-**

- Scaling ,

**Option ID :- 1353,**

- Shear ,

**Option ID :- 1354,**

- Homography ,

**Option ID :- 1355,**

- Steganography ,

**Option ID :- 1356,**

This transformation is called

$$\begin{bmatrix} \bar{x} \\ \bar{y} \\ \bar{z} \\ \bar{w} \end{bmatrix} = \begin{bmatrix} a_1 & b_1 & c_1 & d_1 \\ a_2 & b_2 & c_2 & d_2 \\ a_3 & b_3 & c_3 & d_3 \\ e & f & g & h \end{bmatrix} - \begin{bmatrix} x \\ y \\ z \\ 1 \end{bmatrix}$$

A. Scaling B. Shear C. Homography D. Steganography

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## 32.0.93 UGC NET CSE | October 2022 | Part 1 | Question:: 66 top

Which mechanism in XML allows organizations to specify globally unique names as element tags in documents?

**Options:-**

- root ,
**Option ID :- 1341,**
- header ,
**Option ID :- 1342,**
schema
- ,
**Option ID :- 1343,**
namespace
- ,
**Option ID :- 1344,**

Which mechanism in $\mathrm{XML}$ allows organizations to specify globally unique names as element tags in documents?

A. root B. header C. schema D. namespace

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## 32.0.94 UGC NET CSE | October 2022 | Part 1 | Question:: 19 top

Which of the following is an indirect measure of product?

**Options:-**

- Quality ,
**Option ID :- 1389,**
- Complexity ,
**Option ID :- 1390,**
- Reliability ,
**Option ID :- 1391,**
All of these
- ,
**Option ID :- 1392,**

Which of the following is an indirect measure of product?

A. Quality B. Complexity C. Reliability D. All of these

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## 32.0.95 UGC NET CSE | October 2022 | Part 1 | Question:: 9 top

The number of nodes of height h in any n-element heap is atmost:

**Options:-**

- $n/2^{h+1}$ ,
**Option ID :- 1433,**
- $\frac{n}{2^{h-1}}$ ,
**Option ID :- 1434,**
- $\frac{n}{2^h}$ ,
**Option ID :- 1435,**
- $\frac{n-1}{2^{h-1}}$ ,
**Option ID :- 1436,**

The number of nodes of height $\mathrm{h}$ in any $\mathrm{n}$-element heap is atmost:

A. $n/2^{n+1}$ B. $\frac{n}{2^{h-1}}$ C. $\frac{n}{2^h}$ D. $\frac{n-1}{2^{h-1}}$

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## 32.0.96 UGC NET CSE | October 2022 | Part 1 | Question:: 67 top

Consider the following related to Fourth Generation Technique (4GT) :

(A) It controls efforts.

(B) It controls resources.

(C) It controls cost of development.

Choose the correct answer from the options given below :

**Options:-**

- (A) and (B) only ,
**Option ID :- 1489,**
- (B) and (C) only ,
**Option ID :- 1490,**
- (C) and (A) only ,
**Option ID :- 1491,**
- All (A), (B) and (C) ,
**Option ID :- 1492,**

Consider the following related to Fourth Generation Technique (4GT) :
(A) It controls efforts.
(B) It controls resources.
(C) It controls cost of development.

Choose the correct answer from the options given below :

A. (A) and (B) only
B. (B) and (C) only
C. (C) and (A) only
D. All (A), (B) and (C)

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## 32.0.97 UGC NET CSE | October 2022 | Part 1 | Question:: 68 top

Consider the following two lists :

| | List I | | List II |
|---|---|---|---|
| (A) | Stack overflow | (I) | Software interrupt |
| (B) | Timer | (II) | Internal interrupt |
| (C) | Invalid opcode | (III) | External interrupt |
| (D) | Superior call | (IV) | Machine check interrupt |

Which of the following is correct match ?

**Options:-**

- (A)-(I), (B)-(II), (C)-(III), (D)-(IV) ,
**Option ID :- 1457,**
- (A)-(II), (B)-(III), (C)-(I), (D)-(IV) ,
**Option ID :- 1458,**
- (A)-(I), (B)-(II), (C)-(IV), (D)-(III) ,
**Option ID :- 1459,**
- (A)-(II), (B)-(III), (C)-(IV), (D)-(I) ,
**Option ID :- 1460,**

Consider the following two lists :

| List I | List II |
|---|---|
| (A) Stack overflow | (I) Software interrupt |
| (B)Timer | (II) Internal interrupt |
| (C)Invalidopcode | (III) External interrupt |
| (D)Superiorcall | (IV) Machine check interrupt |

Which of the following is correct match ?

A. (A)-(I), (B)-(II), (C)-(III), (D)-(IV)
B. (A)-(II), (B)-(III), (C)-(I), (D)-(IV)
C. (A)-(I), (B)-(II), (C)-(IV), (D)-(III)
D. (A)-(II), (B)-(III), (C)-(IV), (D)-(I)

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## 32.0.98 UGC NET CSE | October 2022 | Part 1 | Question:: 8 top

A 4-stage pipeline has the stage delay as 150,120,160 and 140 ns respectively. Registers that are used between the stages have delay of 5 ns. Assuming constant locking rate, the total time required to process 1000 data items on this pipeline is

**Options:-**

- 160.5 ms ,

**Option ID :- 1417,**

- 165.5 ms ,

**Option ID :- 1418,**

- 120.5 ms ,

**Option ID :- 1419,**

- 590.5 ms ,

**Option ID :- 1420,**

**Answer Given:-** 165.5 ms , **Option ID : -1418**

**Question ID:- 359**

A $4$-stage pipeline has the stage delay as $150, 120, 160$ and $140$ ns respectively. Registers that are used between the stages have delay of $5$ ns. Assuming constant locking rate, the total time required to process $1000$ data items on this pipeline is

A. $160.5$ ms
B. $165.5$ ms
C. $120.5$ ms
D. $590.5$ ms

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## 32.0.99 UGC NET CSE | October 2022 | Part 1 | Question:: 69 top

Let $\epsilon = 0.0005$, and Let $R_e$ be the relation $\{(x, y) \in R^2 : |x - y| < \epsilon\}$. $R_e$ could be interpreted as the relation approximately equal. $R_e$ is

(A) Reflexive

(B) Symmetric

(C) transitive

Choose the correct answer from the options given below :

**Options:-**

- (A) and (B) only true ,

**Option ID :- 1513,**

- (B) and (C) only true ,

**Option ID :- 1514,**

- (A) and (C) only true ,

**Option ID :- 1515,**

- (A), (B) and (C) true ,

**Option ID :- 1516,**

Let $e = 0.0005$, and Let $\mathrm{R}_e$ be the relation $\{(x, y) \in R^2 : |x - y| < \in\}$. $\mathrm{R}_e$ could be interpreted as the relation approximately equal. $\mathrm{R}_e$ is

(A) Reflexive
(B) Symmetric
(C) transitive

Choose the correct answer from the options given below :

A. $(\mathrm{A})$ and $(\mathrm{B})$ only true
B. $(\mathrm{B})$ and $(\mathrm{C})$ only true
C. $(\mathrm{A})$ and $(\mathrm{C})$ only true
D. $(\mathrm{A})$, $(\mathrm{B})$ and $(\mathrm{C})$ true

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## 32.0.100 UGC NET CSE | October 2022 | Part 1 | Question:: 62 top

Match List I with List II :

| List I | | List II | |
|---|---|---|---|
| (A) | Firmware | (I) | Number of logical records into physical blocks |
| (B) | Batch file | (II) | ASCII format |
| (C) | Packing | (III) | Resource allocation |
| (D) | Banker's Algorithm | (IV) | ROM |

Choose the correct answer from the options given below :

**Options:-**

- (A)-(II), (B)-(I), (C)-(IV), (D)-(III) ,

**Option ID :- 1541,**

- (A)-(II), (B)-(I), (C)-(III), (D)-(IV) ,

**Option ID :- 1542,**

- (A)-(IV), (B)-(II), (C)-(I), (D)-(III) ,

**Option ID :- 1543,**

- (A)-(IV), (B)-(I), (C)-(II), (D)-(III) ,

Match List I with List II :

| List I | List II |
|---|---|
| (A) Firmware | (I) Number of logical records into physical blocks |
| (B) Batch file | (II) ASCII format |
| (C) Packing | (III) Resource allocation |
| (D) Banker's Algorithm | (IV) ROM |

Choose the correct answer from the options given below :

A. (A)-(II), (B)-(I), (C)-(IV), (D)-(III)
B. (A)-(II), (B)-(I), (C)-(III), (D)-(IV)
C. (A)-(IV), (B)-(II), (C)-(I), (D)-(III)
D. (A)-(IV), (B)-(I), (C)-(II), (D)-(III)

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## 32.0.101 UGC NET CSE | October 2022 | Part 1 | Question:: 70 top

Of the following, which is NOT a logical error?

**Options:-**

- Using the '=', instead of ' = =' to determine if two values are equal ,

**Option ID :- 1601,**

- Divide by zero ,

**Option ID :- 1602,**

- Failing to initialize counter and total variables before the body of loop ,

**Option ID :- 1603,**

- Using commas instead of two required semicolon in a for loop header ,

**Option ID :- 1604,**

Of the following, which is NOT a logical error?

A. Using the $'=$ instead of $'==$ to determine if two values are equal,
B. Divide by zero
C. Failing to initialize counter and total variables before the body of loop,
D. Using commas instead of two required semicolon in a for loop header

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## 32.0.102 UGC NET CSE | October 2022 | Part 1 | Question:: 7 top

Match List I with List II :

| List I | | List II | |
|---|---|---|---|
| (A) | Ontological Engineering | (I) | Organizing subclass relations |
| (B) | Taxonomy Hierarchy | (II) | Organizing knowledge into category and sub category |
| (C) | Inheritance | (III) | Attaches a number with each possibility |
| (D) | Probability mode | (IV) | Representing concepts, events, time, physical concepts of different domains |

Choose the correct answer from the options given below :

**Options:-**

- (A)-(II), (B)-(I), (C)-(IV), (D)-(III) ,
**Option ID :- 1533,**
- (A)-(I), (B)-(II), (C)-(III), (D)-(IV) ,
**Option ID :- 1534,**
- (A)-(IV), (B)-(III), (C)-(I), (D)-(II) ,
**Option ID :- 1535,**
- (A)-(IV), (B)-(I), (C)-(II), (D)-(III) ,
**Option ID :- 1536,**

Match List I with List II :

| **List I** | List II |
|---|---|
| (A) Ontological Engineering | (I) Organizing subclass relations |
| (B) Taxonomy Hierarchy | (II) Organizing knowledge into category and sub category |
| (C) Inheritance | (III) Attaches a number with each possibility |
| (D) Probability mode | (IV) Representing concepts. events, time. physical concepts of different domains |

Choose the correct answer from the options given below :

A. (A)-(II), (B)-(I), (C)-(IV), (D)-(III)
B. (A)-(I), (B)-(II), (C)-(III), (D)-(IV)
C. (A)-(IV), (B)-(III), (C)-(I), (D)-(II)
D. (A)-(IV), (B)-(I), (C)-(II), (D)-(III)

ugcnetcse-oct2022-paper1

## 32.1 3 Puzzle (1) top

### 32.1.1 3 Puzzle: UGC NET CSE | June 2016 | Part 3 | Question: 74 top

Consider a 3-puzzle where, like in the usual 8-puzzle game, a tile can only move to an adjacent empty space. Given the initial state

| | |
|---|---|
| 1 | 2 |
| | 3 |

which of the following state cannot be reached?

A

| | |
|---|---|
| 3 | 1 |
| | 2 |

B

| | |
|---|---|
| | 3 |
| 2 | 1 |

C

| | |
|---|---|
| 1 | 3 |
| | 2 |

D

| | |
|---|---|
| | 2 |
| 1 | 3 |

ugcnetcse-june2016-paper3 artificial-intelligence 3-puzzle

Answer key

## 32.2 Algorithm Design (1) top

### 32.2.1 Algorithm Design: UGC NET CSE | October 2022 | Part 1 | Question:: 74 top

Which of the following algorithm design approach is used in Quick sort algorithm?

**Options:-**

- Dynamic programming ,
**Option ID :- 1441,**
- Back Tracking ,
**Option ID :- 1442,**
- Divide and conquer ,
**Option ID :- 1443,**
- Greedy approach ,
**Option ID :- 1444,**

Which of the following algorithm design approach is used in Quick sort algorithm?

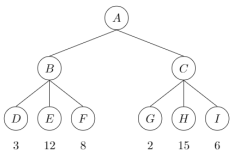
A. Dynamic programming
B. Back Tracking
C. Divide and conquer
D. Greedy approach

ugcnetcse-oct2022-paper1 algorithm-design quick-sort

## 32.3 Alpha Beta Pruning (1) top

### 32.3.1 Alpha Beta Pruning: UGC NET CSE | June 2016 | Part 3 | Question: 73 top

Consider the following game tree in which root is a maximizing node and children are visited left to right. What nodes will be pruned by the alpha-beta pruning?




A. $I$
B. $HI$
C. $CHI$
D. $GHI$

ugcnetcse-june2016-paper3 artificial-intelligence alpha-beta-pruning

Answer key

## 32.4 Alpha Cut (1) top

### 32.4.1 Alpha Cut: UGC NET CSE | June 2019 | Part 2 | Question: 95 top

Let $A_{\alpha_0}$ denotes the $\alpha$-cut of a fuzzy set $A$ at $\alpha_0$. If $\alpha_1 < \alpha_2$, then

A. $A_{\alpha_1} \supseteq A_{\alpha_2}$
B. $A_{\alpha_1} \supset A_{\alpha_2}$
C. $A_{\alpha_1} \subseteq A_{\alpha_2}$
D. $A_{\alpha_1} \subset A_{\alpha_2}$

ugcnetcse-june2019-paper2 fuzzy-set alpha-cut

Answer key

## 32.5 Application Software (1) top

### 32.5.1 Application Software: UGC NET CSE | June 2010 | Part 2 | Question: 45 top

Applications-software

A. Is used to control the operating system
B. Includes programs designed to help programmers
C. Performs a specific task for computer users
D. All of the above

ugcnetcse-june2010-paper2 application-software

Answer key

## 32.6 Bigdata Hadoop (1) top

### 32.6.1 Bigdata Hadoop: UGC NET CSE | June 2019 | Part 2 | Question: 38 top

Hadoop (a big data tool) works with number of related tools. Choose from the following, the common tools included into Hadoop:

A. MySQL, Google API and Map reduce
B. Map reduce, Scala and Hummer
C. Map reduce, H Base and Hive
D. Map reduce, Hummer and Heron

ugcnetcse-june2019-paper2 bigdata-hadoop

Answer key

## 32.7 Convex Optimization (1) top

### 32.7.1 Convex Optimization: UGC NET CSE | July 2018 | Part 2 | Question: 82 top

Which of the following statements is false about convex minimization problem?

A. If a local minimum exists, then it is a global minimum
B. The set of all global minima is convex set
C. The set of all global minima is concave set
D. For each strictly convex function, if the function has a minimum, then the minimum is unique

ugcnetcse-july2018-paper2 convex-optimization

Answer key

## 32.8 Data Mining (2) top

### 32.8.1 Data Mining: UGC NET CSE | June 2010 | Part 2 | Question: 50 top

Data Mining uses _____, _____ and _____ to build effective predictive model.

(i) Data set

(ii) Information set

(iii) Input set

(iv) Process set

(v) Output set

(vi) Test set

$(i), (ii)$ and $(iv)$

$(ii), (iv)$ and $(v)$

$(i), (v)$ and $(vi)$

$(ii), (iii)$ and $(v)$

ugcnetcse-june2010-paper2 data-mining

### 32.8.2 Data Mining: UGC NET CSE | June 2016 | Part 2 | Question: 50 top

Given the following two statements:

I. Strategic value of data mining is timestamping
II. Information collection is an expensive process in building an expert system

Which of the following options is correct?

A. Both I and II are false
B. Both I and II are true
C. I is true, II is false
D. I is false, II is true

ugcnetcse-june2016-paper2 data-mining

Answer key

## 32.9 Data Warehousing (4) top

### 32.9.1 Data Warehousing: UGC NET CSE | June 2012 | Part 3 | Question: 20 top

Data Warehouse provides

A. Transaction Responsiveness
B. Storage, Functionality Responsiveness to queries
C. Demand and Supply Responsiveness
D. None of the above

ugcnetcse-june2012-paper3 data-warehousing

Answer key

### 32.9.2 Data Warehousing: UGC NET CSE | June 2012 | Part 3 | Question: 7 top

Match the following :

| | | | |
|---|---|---|---|
| (i) | OLAP | (a) | Regression |
| (ii) | OLTP | (b) | Data Warehouse |
| (iii) | Decision tree | (c) | RDBMS |
| (iv) | Neural Network | (d) | Classification |

A. (i)-(b), (ii)-(c), (iii)-(a), (iv)-(d)
B. (i)-(b), (ii)-(c), (iii)-(d), (iv)-(a)
C. (i)-(c), (ii)-(b), (iii)-(a), (iv)-(d)
D. (i)-(b), (ii)-(c), (iii)-(d), (iv)-(a)

ugcnetcse-june2012-paper3 data-mining data-warehousing

Answer key

### 32.9.3 Data Warehousing: UGC NET CSE | June 2016 | Part 2 | Question: 47 top

Consider the following two statements:

I. Business intelligence and Data warehousing is used for forecasting and Data mining
II. Business intelligence and Data warehousing is used for analysis of large volumes of sales data

Which one of the following options is correct?

A. I is true , II is false
B. Both I and II are true
C. I is false II is false
D. Both I and II are false

ugcnetcse-june2016-paper2 data-warehousing

Answer key

### 32.9.4 Data Warehousing: UGC NET CSE | June 2016 | Part 2 | Question: 49 top

Consider the following two statements:

I. Data scrubling is a process to upgrade the quality of data, before it is moved into Data warehouse
II. Data scrubling is a process of rejecting data from data warehouse to create indexes

Which one of the following options is correct?

A. I is true II is false
B. I is false II is true
C. Both I and II are false
D. Both I and II are true

ugcnetcse-june2016-paper2 data-warehousing

Answer key

## 32.10 Debugger (1) top

### 32.10.1 Debugger: UGC NET CSE | December 2014 | Part 2 | Question: 34 top

Debugger is a program that

A. Allows to examine and modify the contents of registers
B. Does not allow execution of a segment of program
C. Allows to set breakpoints, execute a segment of program and display contents of register
D. All of the above

ugcnetcse-dec2014-paper2 debugger

Answer key

## 32.11 Defuzzification (1) top

### 32.11.1 Defuzzification: UGC NET CSE | June 2019 | Part 2 | Question: 96 top

Consider the following methods:

$M_1$: Mean of maximum

$M_2$: Centre of area

$M_3$: Height method

Which of the following is/are defuzzification method(s)?

A. Only $M_2$ B. Only $M_1$ and $M_2$ C. Only $M_2$ and $M_3$ D. $M_1$, $M_2$ and $M_3$

ugcnetcse-june2019-paper2 fuzzy-set defuzzification

Answer key

## 32.12 Encryption Decryption (1) top

### 32.12.1 Encryption Decryption: UGC NET CSE | July 2018 | Part 2 | Question: 48 top

Decrypt the message "WTAAD" using the Caesar Cipher with key =15

A. LIPPS B. HELLO C. PLLEH D. DAATW

ugcnetcse-july2018-paper2 cryptography encryption-decryption

Answer key

## 32.13 Fuzzy Relation (1) top

### 32.13.1 Fuzzy Relation: UGC NET CSE | June 2016 | Part 3 | Question: 64 top

Let R and S be two fuzzy relations defined as

$$\text{R}= \begin{array}{c} \\ x_1 \\ x_2 \end{array} \begin{array}{c} \begin{array}{cc} y_1 & y_2 \end{array} \\ \begin{bmatrix} 0.7 & 0.5 \\ 0.8 & 0.4 \end{bmatrix} \end{array}$$

and

$$\text{S}= \begin{array}{c} \\ y_1 \\ y_2 \end{array} \begin{array}{c} \begin{array}{ccc} z_1 & z_2 & z_3 \end{array} \\ \begin{bmatrix} 0.9 & 0.6 & 0.2 \\ 0.1 & 0.7 & 0.5 \end{bmatrix} \end{array}$$

Then, the resulting relation T, which related elements of universe xto elements of universe z using max-min composition is given by

A. $\text{T}= \begin{array}{c} \\ x_1 \\ x_2 \end{array} \begin{array}{c} \begin{array}{ccc} z_1 & z_2 & z_3 \end{array} \\ \begin{bmatrix} .5 & .7 & .5 \\ .8 & .8 & .8 \end{bmatrix} \end{array}$

B. $\text{T}= \begin{array}{c} \\ x_1 \\ x_2 \end{array} \begin{array}{c} \begin{array}{ccc} z_1 & z_2 & z_3 \end{array} \\ \begin{bmatrix} .5 & .7 & .5 \\ .9 & .6 & .5 \end{bmatrix} \end{array}$

C. $\text{T}= \begin{array}{c} \\ x_1 \\ x_2 \end{array} \begin{array}{c} \begin{array}{ccc} z_1 & z_2 & z_3 \end{array} \\ \begin{bmatrix} 0.7 & 0.6 & 0.5 \\ 0.8 & 0.6 & 0.4 \end{bmatrix} \end{array}$

D. $\text{T}= \begin{array}{c} \\ x_1 \\ x_2 \end{array} \begin{array}{c} \begin{array}{ccc} z_1 & z_2 & z_3 \end{array} \\ \begin{bmatrix} 0.7 & 0.6 & 0.5 \\ 0.8 & 0.8 & 0.8 \end{bmatrix} \end{array}$

ugcnetcse-june2016-paper3 fuzzy-set fuzzy-relation

Answer key

## 32.14 Fuzzy Set (5) top

### 32.14.1 Fuzzy Set: UGC NET CSE | December 2012 | Part 3 | Question: 13 top

Consider a fuzzy set A defined on the interval X=[0, 10]of integers by the membership Junction $\mu_A(x) = \frac{x}{x+2}$. Then the $\alpha$ cut corresponding to $\alpha =0.5 will be

A. $\{0,1,2,3,4,5,6,7,8,9,10\}$
B. $\{1,2,3,4,5,6,7,8,9,10\}$
C. $\{2,3,4,5,6,7,8,9,10\}$
D. $\{\}$

ugcnetcse-dec2012-paper3 fuzzy-set

Answer key

### 32.14.2 Fuzzy Set: UGC NET CSE | December 2014 | Part 3 | Question: 71 top

A _____ point of a fuzzy set $A$ is a point $x \in X$ at which $\mu_A(x) = 0.5$

A. Core
B. Support
C. Crossover
D. $\alpha$-cut

ugcnetcse-dec2014-paper3 fuzzy-set

Answer key

### 32.14.3 Fuzzy Set: UGC NET CSE | December 2015 | Part 3 | Question: 65 top

Consider a standard additive model consisting of rules of the form of

If $x$ is $A_i$ AND $y$ is $B_i$ THEN $z$ is $C_i$. Given crisp inputs $x = x_0,\ y = y_0$ the output of the model is

A. $z = \Sigma_i \mu_{A_i}(x_0)\mu_{B_i}(y_0)\mu_{C_i}(z)$
B. $z = \Sigma_i \mu_{A_i}(x_0)\mu_{B_i}(y_0)$
C. $z = \text{centroid}\ (\Sigma_i \mu_{A_i}(x_0)\mu_{B_i}(y_0)\mu_{C_i}(z))$
D. $z = \text{centroid}\ (\Sigma_i \mu_{A_i}(x_0)\mu_{B_i}(y_0)$

ugcnetcse-dec2015-paper3 fuzzy-set

Answer key

### 32.14.4 Fuzzy Set: UGC NET CSE | December 2015 | Part 3 | Question: 66 top

A bell shaped membership function is specified by three parameters $(a, b, c)$ as follows:

A. $$\frac{1}{1+\left(\frac{x-c}{a}\right)^b}$$
B. $$\frac{1}{1+\left(\frac{x-c}{a}\right)^{2b}}$$
C. $$1+\left(\frac{x-c}{a}\right)^b$$
D. $$1+\left(\frac{x-c}{a}\right)^{2b}$$

ugcnetcse-dec2015-paper3 fuzzy-set

Answer key

### 32.14.5 Fuzzy Set: UGC NET CSE | June 2016 | Part 3 | Question: 65 top

Compute the value of adding the following two fuzzy integers:

A={(0.3,1), (0.6,2), (1,3), (0.7,4), (0.2,5)}

B={(0.5,11), (1, 12), (0.5, 13)}

Where fuzzy addition is defined as

$\mu_{A+B}(z) = max_{x+y=z}(min(\mu_A(x), \mu_b(x)))$

Then, f(A+B) is equal to

A. {(0.5, 12), (0.6, 13), (1, 14), (0.7, 15), (0.7, 16), (1, 17), (1, 18)}
B. {(0.5, 12), (0.6, 13), (1, 14), (1, 15), (1, 16), (1, 17), (1, 18)}

C. {(0.3, 12), (0.5, 13), (0.5, 14), (1, 15), (0.7, 16), (0.5, 17), (0.2, 18)}
D. {(0.3, 12), (0.5, 13), (0.6, 14), (1, 15), (0.7, 16), (0.5, 17), (0.2, 18)}

ugcnetcse-june2016-paper3 fuzzy-set

Answer key

## 32.15 Geographical Information System (1) top

### 32.15.1 Geographical Information System: UGC NET CSE | December 2011 | Part 2 | Question: 46 top

To compare, overlay or cross analyze to maps in $GIS$.

A. Both maps must be in digital form
B. Both maps must be at the same equivalent scale.
C. Both maps must be on the same coordinate system
D. All of the above

ugcnetcse-dec2011-paper2 geographical-information-system

Answer key

## 32.16 Hamming Code (1) top

### 32.16.1 Hamming Code: UGC NET CSE | October 2022 | Part 1 | Question:: 55 top

The representation of 4 bit code 1101 into 7 bit, even parity Hamming code is

**Options:-**

- (1010101) ,
**Option ID :- 1277,**
- (1111001) ,
**Option ID :- 1278,**
- (1011101) ,
**Option ID :- 1279,**
- (1110000) ,
**Option ID :- 1280,**

The representation of $4$ bit code $1101$ into $7$ bit, even parity Hamming code is

A. $(1010101)$ B. $(1111001)$ C. $(1011101)$ D. $(1110000)$

ugcnetcse-oct2022-paper1 hamming-code

Answer key

## 32.17 Hill Climbing Search (1) top

### 32.17.1 Hill Climbing Search: UGC NET CSE | June 2016 | Part 3 | Question: 72 top

How does randomized Hill climbing choose the next move each time?

A. It generates a random move from moveset and accepts this move
B. It generates random move from whole state space, and accepts this move
C. It generates a random move from moveset and accepts this move only if this move improves the evaluation function
D. It generates a random move from whole state space, and accepts this move only if this move improves the evaluation function

ugcnetcse-june2016-paper3 artificial-intelligence hill-climbing-search

Answer key

## 32.18 Inventory (1) top

### 32.18.1 Inventory: UGC NET CSE | December 2014 | Part 2 | Question: 49 top

_____ model is designed to bring prices down by increasing the number of customers who buy a particular product at once.

A. Economic Order Quantity
B. Inventory
C. Data Mining
D. Demand-Sensitive Pricing

ugcnetcse-dec2014-paper2 optimization inventory

Answer key

## 32.19 K Mean Clustering (1) top

### 32.19.1 K Mean Clustering: UGC NET CSE | June 2019 | Part 2 | Question: 40 top

K-mean clustering algorithm has clustered the given $8$ observations into $3$ clusters after $1$st iteration as follows:

$C1: \{(3,3),(5,5),(7,7)\}$
$C2: \{(0,6),(6,0),(3,0)\}$
$C3: \{(8,8),(4,4)\}$

What will be the Manhattan distance for observation $(4,4)$ from cluster centroid $C1$ in the second iteration?

A. $2$ B. $\sqrt{2}$ C. $0$ D. $18$

ugcnetcse-june2019-paper2 k-mean-clustering data-mining

Answer key

## 32.20 Llp (1) top

### 32.20.1 Llp: UGC NET CSE | July 2018 | Part 2 | Question: 83 top

The following LLP

$\text{Maximize } z = 100x_1 + 2x_2 + 5x_3$

Subject to

$14x_1 + x_2 - 6x_3 3 + 3x_4 = 7$
$32x_1 + x_2 - 12x_3 \leq 10$
$3x_1 - x_2 - x_3 \leq 0$
$x_1, x_2, x_3, x_4 \geq 0$ has

A. Solution : $x_1 = 100,\ x_2 = 0,\ x_3 = 0$
B. Unbounded solution
C. No solution
D. Solution : $x_1 = 50,\ x_2 = 70,\ x_3 = 60$

ugcnetcse-july2018-paper2 llp linear-programming

Answer key

## 32.21 Machine Learning (1) top

### 32.21.1 Machine Learning: UGC NET CSE | June 2014 | Part 2 | Question: 29 top

Match the following :

| | List – I | | List – II |
|---|---|---|---|
| a. | Classification | i. | Principal component analysis |
| b. | Clustering | ii. | Branch and Bound |
| c. | Feature Extraction | iii. | K-nearest neighbour |
| d. | Feature Selection | iv. | K-means |

**Codes :**

A. a-iii; b-iv; c-ii; d-i
B. a-iv; b-iii; c-i; d-ii
C. a-iii; b-iv; c-i; d-ii
D. a-iv; b-iii; c-ii; d-i

ugcnetcse-june2014-paper2 machine-learning

Answer key

## 32.22 Net Exam (1) top

### 32.22.1 Net Exam: Information regarding UGC NET top

Can someone please tell what's the use of giving UGC NET in computer science after doing MTech and have given GATE in CSE?

What benefits will NET give when applying for Phd or as an assistant professor?

What is the requirement of NET? I am currently in 1st year MTech, AFAIK we are eligible only if we are in final year MTECH(ie 2nd year) is this right?

net-exam general admissions

## 32.23 Operational Research (2) top

### 32.23.1 Operational Research: UGC NET CSE | December 2014 | Part 3 | Question: 68 top

The occurrence of degeneracy while solving a transportation problem means that

A. Total supply equals total demand
B. Total supply does not equal total demand
C. The solution so obtained is not feasible
D. None of these

ugcnetcse-dec2014-paper3 operational-research transportation-problem

Answer key

### 32.23.2 Operational Research: UGC NET CSE | September 2013 | Part 3 | Question: 14 top

An optimal assignment requires that the minimum number of horizontal and vertical lines that can be drawn to cover all zeros be equal to the number of

A. rows or columns
B. rows + columns
C. rows + columns -1
D. rows + columns +1

ugcnetcse-sep2013-paper3 operational-research assignment-problem

Answer key

## 32.24 Optimization (1) top

### 32.24.1 Optimization: UGC NET CSE | June 2016 | Part 3 | Question: 61 top

The region of feasible solution of a linear programminig problem has a ____ property in geometry, provided the feasible solution of the problem exists

A. concavity
B. convexity
C. quadratic
D. polyhedron

ugcnetcse-june2016-paper3 optimization linear-programming

Answer key

## 32.25 Process Scheduling (1) top

### 32.25.1 Process Scheduling: UGC NET CSE | October 2022 | Part 1 | Question:: 60 top

What is called Journalling in Linux operating system?

**Options:-**

- Process scheduling ,
**Option ID :- 1349,**
- File saving as transaction ,
**Option ID :- 1350,**
- A type of thread ,
**Option ID :- 1351,**
- An editor ,
**Option ID :- 1352,**

What is called Journalling in Linux operating system?

A. Process scheduling
B. File saving as transaction,
C. A type of thread
D. An editor,

ugcnetcse-oct2022-paper1 operating-system process-scheduling

## 32.26 Searching (1) top

### 32.26.1 Searching: UGC NET CSE | December 2014 | Part 3 | Question: 56 top

An $A^*$ algorithm is a heuristic search technique which

A. Is like a depth-first search where most promising child is selected for expansion
B. Generates all successor nodes and computes an estimate of distance (cost) from start node to a goal node through each of the successors. It then chooses the successor with shortest cost.
C. Saves all path lengths (costs) from start node to all generated nodes and chooses shortest path for further expansion.
D. None of the above

ugcnetcse-dec2014-paper3 artificial-intelligence searching

Answer key

## 32.27 Shell (1) top

### 32.27.1 Shell: UGC NET CSE | June 2012 | Part 3 | Question: 71 top

Which one of the following is not a shell in UNIX system?

A. Bourne Shell B. C Shell C. Not Shell D. Korn Shell

ugcnetcse-june2012-paper3 unix shell

Answer key

## 32.28 Shell Script (2) top

### 32.28.1 Shell Script: UGC NET CSE | June 2014 | Part 2 | Question: 35 top

Which of the following commands will output “onetwothree” ?

A. for val; do echo-n $val; done < one two three
B. for one two three; do echo-n-; done
C. for n in one two three; do echo-n $n; done
D. for n in one two three {echo –n $ n}

ugcnetcse-june2014-paper2 non-gate unix shell-script

Answer key

### 32.28.2 Shell Script: UGC NET CSE | June 2014 | Part 3 | Question: 39 top

Match the following with reference to Unix shell scripts :

| | List – I | | List – II |
|---|---|---|---|
| a. | $? | i. | File name of the current script |
| b. | $# | ii. | List of arguments |
| c. | $0 | iii. | The number of arguments |
| d. | $* | iv. | Exit status of last command |

**Codes :**

A. a-iii, b-ii, c-i, d-iv
B. a-ii, b-iii, c-i, d-iv
C. a-iv, b-iii, c-i, d-ii
D. a-i, b-iii, c-i, d-iv

ugcnetjune2014iii unix shell-script

Answer key

## 32.29 Simplex (1) top

### 32.29.1 Simplex: UGC NET CSE | October 2022 | Part 1 | Question:: 13 top

Consider the primal problem :
Maximize $z = 5x_1 + 12x_2 + 4x_3$

Subject to

$$x_1 + 2x_2 + x_3 = 10$$
$$2x_1 - x_2 + 3x_3 = 8$$
$$x_1, x_2, x_3 \geq 0$$

its dual problem is
Minimize $w = 10y_1 + 8y_2$
Subject to

$$y_1 + 2y_2 \geq 5$$
$$2y_1 - y_2 \geq 12$$
$$y_1 + 3y_2 \geq 4$$

Which of the following is correct?

A. $y_1 \geq 0, y_2$ unrestricted
B. $y_1 \geq 0, y_2 \geq 0$
C. $y_1$ is unrestricted, $y_2 \geq 0$
D. $y_1$ is unrestricted. $y_2$ restricted

ugcnetcse-oct2022-paper1 simplex

## 32.30 Simplex Method (2) top

### 32.30.1 Simplex Method: UGC NET CSE | December 2014 | Part 3 | Question: 67 top

If an artificial variable is present in the 'basic variable' column of optimal simplex table, then the solution is

A. Optimum
B. Infeasible
C. Unbounded
D. Degenerate

ugcnetcse-dec2014-paper3 linear-programming simplex-method

Answer key

### 32.30.2 Simplex Method: UGC NET CSE | June 2016 | Part 3 | Question: 62 top

Consider the following statements:

a. Revised simplex method requires less computations than the simplex method
b. Revised simplex method requires less computations than the simplex method
c. Revised simplex method requires less computations than the simplex method

Which of these statements is true?

A. a and b only
B. a and c only
C. b and c only
D. a, b, and c

ugcnetcse-june2016-paper3 optimization simplex-method

Answer key

## 32.31 System Software& Compilers (1) top

### 32.31.1 System Software& Compilers: UGC NET CSE | June 2016 | Part 2 | Question: 32 top

The content of the accumulator after the execution of the following 8085 assembly language program, is:

```
        MVI   A,
        42H
        MVI   B,
        05h
UGC:    ADD B
        DCR B
        JNZ UGC
        ADI 25H
        HLT
```

A. 82 H
B. 78 H
C. 76 H
D. 47 H

ugcnetcse-june2016-paper2 system-software&-compilers

Answer key

## 32.32 Time Complexity (1) top

### 32.32.1 Time Complexity: UGC NET CSE | October 2022 | Part 1 | Question:: 87 top

Consider the following algorithms and their running times :

| | Algorithms | | Complexities |
|---|---|---|---|
| (A) | Breadth First Search | (I) | $\theta(v+E)$ |
| (B) | Rabin-Karp Algorithm | (II) | $O(v+E)$ |
| (C) | Depth-First Search | (III) | $\theta((n-m-1)m)$ |
| (D) | Heap sort (worst case) | (IV) | $O(n^2)$ |
| (E) | Quick sort (worst case) | (V) | $O(n \lg n)$ |

Which one of the following is correct ?

**Options:-**

- (A)-(III), (B)-(II), (C)-(I), (D)-(IV), (E)-(V) ,
**Option ID :- 1557,**
- (A)-(II), (B)-(III), (C)-(I), (D)-(IV), (E)-(V) ,
**Option ID :- 1558,**
- (A)-(II), (B)-(III), (C)-(I), (D)-(V), (E)-(IV) ,
**Option ID :- 1559,**
- (A)-(III), (B)-(I), (C)-(II), (D)-(IV), (E)-(V) ,
**Option ID :- 1560,**

Consider the following algorithms and their running times :

| Algorithms | Complexities |
|---|---|
| (A) Breadth First Search | (I) $\theta(v+E)$ |
| (B) Rabin-Karp Algorithm | (II) $O(v+E)$ |
| (C) Depth-First Search | (III) $\theta((n-m-1)m)$ |
| (D) Heap sort (worst case) | (IV) $O\left(n^2\right)$ |
| (E) Quick sort (worst case) | (V) $O(n \lg n)$ |

Which one of the following is correct?

A. (A)-(III), (B)-(II), (C)-(I), (D)-(IV), (E)-(V)
B. (A)-(II), (B)-(III), (C)-(I), (D)-(IV), (E)-(V)
C. (A)-(II), (B)-(III), (C)-(I), (D)-(V), (E)-(IV)
D. (A)-(III), (B)-(I), (C)-(II), (D)-(IV), (E)-(V)

ugcnetcse-oct2022-paper1 algorithms time-complexity

Answer key

## 32.33 Transportation Problem (1) top

### 32.33.1 Transportation Problem: UGC NET CSE | June 2016 | Part 3 | Question: 63 top

The following transportation problem :

| | A | B | C | Supply |
|---|---|---|---|---|
| I | 50 | 30 | 220 | 1 |
| II | 90 | 45 | 170 | 3 |
| III | 250 | 200 | 50 | 4 |
| Demand | 4 | 2 | 2 | 0 |

Has a solution

| | A | B | C |
|---|---|---|---|
| I | 1 | | |
| II | 3 | 0 | |
| III | | 2 | 2 |

The above solution of a given transportation problem is

A. Infeasible solution
B. optimum solution
C. non-optimum solution
D. unbounded solution

ugcnetcse-june2016-paper3 optimization transportation-problem

Answer key

## 32.34 Unified Modeling Language (1) top

### 32.34.1 Unified Modeling Language: UGC NET CSE | June 2012 | Part 3 | Question: 44 top

Which diagram provides a formal graphic notation for modelling objects, classes and their relationships to one another?

A. Object diagram
B. Class diagram
C. Instance diagram
D. Analysis diagram

ugcnetcse-june2012-paper3 unified-modeling-language

Answer key

## 32.35 Unix (5) top

### 32.35.1 Unix: UGC NET CSE | June 2008 | Part 2 | Question: 24 top

**Files that are related to input/output and are used to model serial I/O devices such as terminals, printers and networks are called :**

**(A) regular files** **(B) character special files**

**(C) directories** **(D) block special files**

ugcnetcse-june2008-paper2 unix

Answer key

### 32.35.2 Unix: UGC NET CSE | June 2010 | Part 2 | Question: 49 top

At any given time Parallel Virtual Machine (PVM) has _____ send buffer and _____ receive buffer.

A. One-one
B. One-two
C. Two-two
D. Two-one

ugcnetcse-june2010-paper2 unix

Answer key

### 32.35.3 Unix: UGC NET CSE | June 2016 | Part 2 | Question: 39 top

In UNIX, ____ creates three subdirectories; 'PIS' and two subdirectories 'progs' and 'data' from just created subdirectory 'PIS'

A. mkdir PIS/progs PIS/data PIS
B. mkdir PIS progs data
C. mkdir PIS PIS/progs PIS/data
D. mkdir PIS/progs data

ugcnetcse-june2016-paper2 unix

Answer key

### 32.35.4 Unix: UGC NET CSE | June 2016 | Part 3 | Question: 52 top

Which of the following option with reference to UNIX operating system is not correct?

A. INT signal is sent by the terminal driver when one types <Control-C> and it is a request to terminate the current operation
B. TERM is a request to terminate execution completely. The receiving process will clean up its state and exit

C. QUIT is similat to TERM, except that it defaults to producing a core dump if not caught.
D. KILL is a blockable signal

ugcnetcse-june2016-paper3 unix

Answer key

### 32.35.5 Unix: UGC NET CSE | June 2016 | Part 3 | Question: 67 top

What is the function of following UNIX command?

WC - l<a >b &

A. It runs the word count program to count the number of lines in its input, a, writing the result to b, as a foreground process
B. It runs the word count program to count the number of lines in its input, a, writing the result to b, but does it in the background
C. It counts the error during the execution of the process, a, and puts the result in process b
D. It copies the 'l' numbers of lines of program file, a, and stores in file b

ugcnetcse-june2016-paper3 unix

Answer key

## 32.36 Vertex Cover (1) top

### 32.36.1 Vertex Cover: UGC NET CSE | October 2022 | Part 1 | Question:: 56 top

Consider the following statements of approximation algorithm :

Statement I : Vertex-cover is a polynomial time 2-approximation algorithm.

Statement II : TSP-tour is a polynomial time 3-approximation algorithm for travelling salesman problem with the triangle inequality.

Which of the following is correct?

**Options:-**

- Statement I true and Statement II false

**Option ID :- 1565,**

- Statement I and Statement II true

**Option ID :- 1566,**

- Statement I false and Statement II true

**Option ID :- 1567,**

- Statement I and Statement II false

**Option ID :- 1568,**

Consider the following statements of approximation algorithm :

**Statement I:** Vertex-cover is a polynomial time $2$-approximation algorithm.

**Statement II:** $\mathrm{TSP}$-tour is a polynomial time $3$-approximation algorithm for travelling salesman problem with the triangle inequality.

Which of the following is correct?

A. Statement $\mathrm{I}$ true and Statement $\mathrm{II}$ false
B. Statement $\mathrm{I}$ and Statement $\mathrm{II}$ true
C. Statement $\mathrm{I}$ false and Statement $\mathrm{II}$ true
D. Statement $\mathrm{I}$ and Statement $\mathrm{II}$ false

ugcnetcse-oct2022-paper1 algorithms vertex-cover

## 32.37 Windows (1) top

### 32.37.1 Windows: UGC NET CSE | June 2012 | Part 3 | Question: 69 top

What is the meaning of ‘Hibernate’ in WindowsXP/Windows 7?

A. Restart the computers in safe mode
B. Restart the computers in normal mode
C. Shutdown the computer terminating all the running applications

D. Shutdown the computer without closing the running applications

ugcnetcse-june2012-paper3 windows

Answer key

## Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 32.0.1 | Q-Q | 32.0.2 | Q-Q | 32.0.3 | Q-Q | 32.0.4 | Q-Q | 32.0.5 | Q-Q |
| 32.0.6 | Q-Q | 32.0.7 | Q-Q | 32.0.8 | Q-Q | 32.0.9 | Q-Q | 32.0.10 | Q-Q |
| 32.0.11 | Q-Q | 32.0.12 | Q-Q | 32.0.13 | Q-Q | 32.0.14 | Q-Q | 32.0.15 | Q-Q |
| 32.0.16 | Q-Q | 32.0.17 | Q-Q | 32.0.18 | Q-Q | 32.0.19 | Q-Q | 32.0.20 | Q-Q |
| 32.0.21 | Q-Q | 32.0.22 | Q-Q | 32.0.23 | Q-Q | 32.0.24 | Q-Q | 32.0.25 | Q-Q |
| 32.0.26 | Q-Q | 32.0.27 | Q-Q | 32.0.28 | Q-Q | 32.0.29 | Q-Q | 32.0.30 | Q-Q |
| 32.0.31 | Q-Q | 32.0.32 | Q-Q | 32.0.33 | Q-Q | 32.0.34 | Q-Q | 32.0.35 | Q-Q |
| 32.0.36 | Q-Q | 32.0.37 | Q-Q | 32.0.38 | Q-Q | 32.0.39 | Q-Q | 32.0.40 | Q-Q |
| 32.0.41 | Q-Q | 32.0.42 | Q-Q | 32.0.43 | Q-Q | 32.0.44 | Q-Q | 32.0.45 | Q-Q |
| 32.0.46 | Q-Q | 32.0.47 | Q-Q | 32.0.48 | Q-Q | 32.0.49 | Q-Q | 32.0.50 | Q-Q |
| 32.0.51 | Q-Q | 32.0.52 | Q-Q | 32.0.53 | Q-Q | 32.0.54 | Q-Q | 32.0.55 | Q-Q |
| 32.0.56 | Q-Q | 32.0.57 | Q-Q | 32.0.58 | Q-Q | 32.0.59 | Q-Q | 32.0.60 | Q-Q |
| 32.0.61 | Q-Q | 32.0.62 | Q-Q | 32.0.63 | Q-Q | 32.0.64 | Q-Q | 32.0.65 | Q-Q |
| 32.0.66 | Q-Q | 32.0.67 | Q-Q | 32.0.68 | Q-Q | 32.0.69 | Q-Q | 32.0.70 | Q-Q |
| 32.0.71 | Q-Q | 32.0.72 | Q-Q | 32.0.73 | Q-Q | 32.0.74 | Q-Q | 32.0.75 | Q-Q |
| 32.0.76 | Q-Q | 32.0.77 | Q-Q | 32.0.78 | Q-Q | 32.0.79 | Q-Q | 32.0.80 | Q-Q |
| 32.0.81 | Q-Q | 32.0.82 | Q-Q | 32.0.83 | Q-Q | 32.0.84 | Q-Q | 32.0.85 | Q-Q |
| 32.0.86 | Q-Q | 32.0.87 | Q-Q | 32.0.88 | Q-Q | 32.0.89 | Q-Q | 32.0.90 | Q-Q |
| 32.0.91 | Q-Q | 32.0.92 | Q-Q | 32.0.93 | Q-Q | 32.0.94 | Q-Q | 32.0.95 | Q-Q |
| 32.0.96 | Q-Q | 32.0.97 | Q-Q | 32.0.98 | Q-Q | 32.0.99 | Q-Q | 32.0.100 | Q-Q |
| 32.0.101 | Q-Q | 32.0.102 | Q-Q | 32.1.1 | C | 32.2.1 | Q-Q | 32.3.1 | B |
| 32.4.1 | A | 32.5.1 | Q-Q | 32.6.1 | C | 32.7.1 | Q-Q | 32.8.1 | Q-Q |
| 32.8.2 | B | 32.9.1 | B | 32.9.2 | B | 32.9.3 | B | 32.9.4 | A |
| 32.10.1 | C | 32.11.1 | D | 32.12.1 | Q-Q | 32.13.1 | C | 32.14.1 | C |
| 32.14.2 | C | 32.14.3 | D | 32.14.4 | A | 32.14.5 | D | 32.15.1 | Q-Q |
| 32.16.1 | Q-Q | 32.17.1 | C | 32.18.1 | D | 32.19.1 | A | 32.20.1 | Q-Q |
| 32.21.1 | C | 32.22.1 | Q-Q | 32.23.1 | C | 32.23.2 | A | 32.24.1 | B |
| 32.25.1 | Q-Q | 32.26.1 | B | 32.27.1 | C | 32.28.1 | C | 32.28.2 | C |
| 32.29.1 | Q-Q | 32.30.1 | B | 32.30.2 | D | 32.31.1 | C | 32.32.1 | Q-Q |
| 32.33.1 | B | 32.34.1 | A | 32.35.1 | Q-Q | 32.35.2 | Q-Q | 32.35.3 | C |
| 32.35.4 | D | 32.35.5 | B | 32.36.1 | Q-Q | 32.37.1 | D | | |

# 33 Non GATE: Web Technologies (32)

## 33.0.1 UGC NET CSE | June 2012 | Part 2 | Question: 9 top

What deletes the entire file except the file structure?

A. ERASE B. DELETE C. ZAP D. PACK

ugcnetcse-june2012-paper2 databases non-gate

Answer key

## 33.1 Activex (1) top

### 33.1.1 Activex: UGC NET CSE | December 2013 | Part 2 | Question: 41 top

Active X controls are Pentium binary programs that can be embedded in

A. Word pages
B. URL pages
C. Script pages
D. Web pages

ugcnetcse-dec2013-paper2 web-technologies activex

Answer key

## 33.2 Client Server Application (1) top

### 33.2.1 Client Server Application: UGC NET CSE | June 2014 | Part 3 | Question: 26 top

Which one of the following is not a Client-Server application ?

A. Internet chat
B. Web browser
C. E-mail
D. Ping

ugcnetjune2014iii web-technologies client-server-application

Answer key

## 33.3 Data Warehousing (1) top

### 33.3.1 Data Warehousing: UGC NET CSE | December 2014 | Part 2 | Question: 47 top

Fact-less fact table in a data warehouse contains

A. Only measures
B. Only dimensions
C. Keys and measures
D. Only surrogate keys

ugcnetcse-dec2014-paper2 data-warehousing

Answer key

## 33.4 E Commerce (1) top

### 33.4.1 E Commerce: UGC NET CSE | December 2014 | Part 2 | Question: 48 top

Which e-business model allows consumers to name their own price for products and services ?

A. $B2B$ B. $B2G$ C. $C2C$ D. $C2B$

ugcnetcse-dec2014-paper2 e-commerce

Answer key

## 33.5 Edi Layer (2) top

### 33.5.1 Edi Layer: UGC NET CSE | December 2013 | Part 2 | Question: 44 top

The document standards for EDI were first developed by large business house during the 1970s and are now under the control of the following standard organization.

A. ISO B. ANSI C. ITU-T D. IEEE

ugcnetcse-dec2013-paper2 e-commerce edi-layer

Answer key

### 33.5.2 Edi Layer: UGC NET CSE | December 2013 | Part 2 | Question: 45 top

Electronic Data Interchange Software consists of the following four layers:

A. Business application, Internal format conversion, Network translator, EDI envelop
B. Business application, Internal format conversion, EDI translator, EDI envelop
C. Application layer, Transport layer, EDI translator, EDI envelop
D. Application layer, Transport layer, IP layer, EDI envelop

ugcnetcse-dec2013-paper2 e-commerce edi-layer

Answer key

## 33.6 Html (5) top

### 33.6.1 Html: UGC NET CSE | August 2016 | Part 3 | Question: 41 top

Which of the following tag in HTML is used to surround information, such as signature of the person who created the page?

A. <body></body>
B. <address></address>
C. 
D. 

ugcnetcse-aug2016-paper3 web-technologies html

Answer key

### 33.6.2 Html: UGC NET CSE | December 2012 | Part 3 | Question: 66 top

Match the following with respect to HTML tags and usage

| | | | |
|---|---|---|---|
| a. | CITE | i. | Italic representation |
| b. | EM | ii. | Represents output from programmes |
| c. | VAR | iii. | Represents to other source |
| d. | SAMP | iv. | Argument to a programme |

**Codes :**

A. a-iii, b-i, c-iv, d-ii
B. a-ii, b-iii, c-i, d-iv
C. a-iv, b-ii, c-iii, d-i
D. a-i, b-iii, c-iv, d-i

ugcnetcse-dec2012-paper3 web-technologies html

Answer key

### 33.6.3 Html: UGC NET CSE | January 2017 | Part 3 | Question: 41 top

Which of the following HTML code will affect the vertical alignment of the table content?

A.
```
<td style="vertical-align:middle"> Text Here </td>
```

B.
```
<td valign="centre"> Text Here </td>
```

C.
```
<td style="text-align:center"> Text Here </td>
```

D.
```
<td align="middle"> Text Here </td>
```

ugcnetcse-jan2017-paper3 web-technologies html

Answer key

### 33.6.4 Html: UGC NET CSE | June 2012 | Part 3 | Question: 68 top

HTML is defined using SGML – an _____ standard, information processing-text and office systems (SGML) for text information processing.

A. ISO-8878
B. ISO-8879
C. ISO-8880
D. ISO-8881

ugcnetcse-june2012-paper3 web-technologies html

Answer key

### 33.6.5 Html: UGC NET CSE | June 2016 | Part 3 | Question: 41 top

Which of the following statements is not correct?

A. HTML is not screen precise formatting language
B. HTML does not specify a logic
C. DHTML is used to developing highly interacting webpages
D. HTML is a programming language

ugcnetcse-june2016-paper3 html web-technologies

Answer key

## 33.7 Javascript (2) top

### 33.7.1 Javascript: UGC NET CSE | December 2015 | Part 3 | Question: 34 top

Javascript and Java have similar name because

a. Jabascripts syntax is [illegible] are originated from island of Java

A. a [illegible] and c

ugcnetcse-dec2015-paper3 web-technologies javascript

Answer key

### 33.7.2 Javascript: UGC NET CSE | July 2018 | Part 2 | Question: 1 top

Consider the JavaScript Code:

```
var y="12"
function f() {
var y="6";
alert (this.y);
function g() {alert (y); }
g();
}
f();
```

If $M$ is the number of alert dialog boxes generated by this JavaScript code and D1, D2,. . ., $D_M$ represents the content displayed in the each of the $M$ dialog boxes, then:

A. M=3; D1 displays “12”; D2 displays “6”; D3 displays “12”
B. M=3; D1 displays”6”; D2 displays “12”; D3 displays “6”
C. M=2; D1 displays”6”; D2 displays “12”.
D. M=3; D1 displays”12”; D2 displays “6”

ugcnetcse-july2018-paper2 javascript web-technologies

Answer key

## 33.8 Transmission Media (1) top

### 33.8.1 Transmission Media: UGC NET CSE | December 2012 | Part 2 | Question: 28 top

Identify the Risk factors which are associated with Electronic payment system

A. Fraudulent use of credit card
B. Sending credit card details over internet
C. Remote storage of credit card details
D. All of the above

ugcnetcse-dec2012-paper2 computer-networks transmission-media

Answer key

## 33.9 Trojan Horse (1) top

### 33.9.1 Trojan Horse: UGC NET CSE | December 2014 | Part 3 | Question: 74 top

A Trojan horse is

A. A program that performs a legitimate function that is known to an operating system or its user and also has a hidden component that can be used for nefarious purposes like attacks on message security or impersonation.
B. A piece of code that can attach itself to other programs in the system and spread to other systems when programs are copied or transferred.
C. A program that spreads to other computer systems by exploiting security holes like weaknesses in facilities for creation of remote processes
D. All of the above

ugcnetcse-dec2014-paper3 trojan-horse

Answer key

## 33.10 Web Technologies (8) top

### 33.10.1 Web Technologies: UGC NET CSE | December 2013 | Part 3 | Question: 13 top

The document that is used by XSLT to indicate, how to transform the elements of the XML document to another format is

A. HTML page
B. DOC type procedure
C. Style sheet
D. Stored procedure

ugcnetcse-dec2013-paper3 web-technologies

Answer key

### 33.10.2 Web Technologies: UGC NET CSE | December 2015 | Part 3 | Question: 75 top

_____ tag is an extension to HTML that can enclose any number of Javascript statements.

A. <SCRIPT>
B. <BODY>
C. <HEAD>
D. <TITLE>

ugcnetcse-dec2015-paper3 web-technologies

Answer key

### 33.10.3 Web Technologies: UGC NET CSE | January 2017 | Part 3 | Question: 42 top

What can you say about the following statements?

I. XML tags are case-insensitive
II. In JavaScript, identifier names are case-sensitive
III. Cascading Style Sheets (CSS) cannot be used with XML
IV. All well formed XML documents must contain a document type definition

A. only I and II are false
B. only III and IV are false
C. only I and III are false
D. only II and IV are false

ugcnetcse-jan2017-paper3 web-technologies programming

Answer key

### 33.10.4 Web Technologies: UGC NET CSE | June 2012 | Part 2 | Question: 42 top

Identify the incorrect statement:

A. The overall strategy drives the E-Commerce data warehousing strategy
B. Data warehousing in an E-Commerce environment should be done in classical manner
C. E-Commerce opens up and entirely new world web server
D. E-Commerce security threats can be grouped into three major categories

non-gate web-technologies ugcnetcse-june2012-paper2

Answer key

### 33.10.5 Web Technologies: UGC NET CSE | June 2012 | Part 2 | Question: 44 top

_____ is not an E-Commerce application

A. House banking
B. Buying stocks
C. Conducting an auction
D. Evaluating an employee

non-gate web-technologies ugcnetcse-june2012-paper2

Answer key

### 33.10.6 Web Technologies: UGC NET CSE | June 2014 | Part 3 | Question: 54 top

Linking to another place in the same or another webpage require two A (Anchor) tags, the first with the _____ attribute and the second with the _____ attribute.

A. NAME & LINK
B. LINK & HREF
C. HREF & NAME
D. TARGET & VALUE

ugcnetjune2014iii web-technologies

Answer key

### 33.10.7 Web Technologies: UGC NET CSE | June 2019 | Part 2 | Question: 25 top

Which of the following statements is/are true?

P : In a scripting language like JacaScript, types are typically associated with values, not variables.

Q : It is not possible to show images on a web page without the <img> tag of HTML.

Select the correct answer from the options given below:

A. P only
B. Q only
C. Both P and Q
D. Neither P nor Q

ugcnetcse-june2019-paper2 web-technologies

Answer key

### 33.10.8 Web Technologies: UGC NET CSE | October 2020 | Part 2 | Question: 10 top

In HTML, $< \text{map} >$ tag is used for

A. defining a path between two nodes in an image
B. defining clickable region in an image
C. highlighting an area in an image
D. defining the site-map of a web-site

ugcnetcse-oct2020-paper2 non-gate web-technologies

Answer key

## 33.11 Xml (7) top

### 33.11.1 Xml: UGC NET CSE | December 2014 | Part 3 | Question: 40 top

The behaviour of the document elements in $XML$ can be defined by

A. Using document object
B. Registering appropriate event handlers
C. Using element object
D. All of the above

ugcnetcse-dec2014-paper3 web-technologies xml

Answer key

### 33.11.2 Xml: UGC NET CSE | December 2015 | Part 3 | Question: 35 top

Which of the following statements are true with reference to the way of describing XML data?

a. XML uses DTD to describe the data
b. XML uses XSL to describe the data
c. XML uses a description node to describe the data

A. a only
B. b only
C. a and b
D. a and c

ugcnetcse-dec2015-paper3 web-technologies xml

Answer key

### 33.11.3 Xml: UGC NET CSE | July 2018 | Part 2 | Question: 2 top

The definitions in an XML document are said to be _____ when the tagging system ans definitions in the DTD are all in compliance

A. well-formed B. reasonable C. valid D. logical

ugcnetcse-july2018-paper2 xml web-technologies

Answer key

### 33.11.4 Xml: UGC NET CSE | June 2019 | Part 2 | Question: 26 top

Which of the following statements is/are true?

P : An XML document with correct syntax as specified by W3C is called “Well Formed”.

Q : An XML documented validated against a DTD is both “Well formed” and “valid”.

R : <xml version=”1.0” encoding =”UTF-8”>

is syntactly correct declaration for the version of an XML document.

Select the correct answer from the options given below:

A. P and Q only B. P and R only C. Q and R only D. All of P, Q and R

ugcnetcse-june2019-paper2 xml

Answer key

### 33.11.5 Xml: UGC NET CSE | Junet 2015 | Part 3 | Question: 40 top

In XML we can specify the frequency of an element by using the symbols:

A. +*! B. #*! C. +*? D. -*?

ugcnetcse-june2015-paper3 web-technologies xml

Answer key

### 33.11.6 Xml: UGC NET CSE | Junet 2015 | Part 3 | Question: 41 top

In XML, DOCTYPE declaration specifies to include a reference to ____ file

A. Document type Definition
B. Document type declaration
C. Document transfer definition
D. Document type language

ugcnetcse-june2015-paper3 web-technologies xml

Answer key

### 33.11.7 Xml: UGC NET CSE | September 2013 | Part 2 | Question: 38 top

The _____ language was originally designed as the Transformation Language for Style Sheet Facility

A. XSTL B. XML C. XQuery D. XPath

ugcnetsep2013ii web-technologies xml html

Answer key

## 33.12 Xsl (1) top

### 33.12.1 Xsl: UGC NET CSE | December 2012 | Part 3 | Question: 61 top

Which one is a collection of templates and rules?

A. XML B. CSS C. DHTML D. XSL

ugcnetcse-dec2012-paper3 web-technologies xsl

Answer key

# Answer Keys

| | |
|---|---|
| 33.0.1 | C |
| 33.5.1 | B |
| 33.6.4 | B |
| 33.9.1 | A |
| 33.10.5 | D |
| 33.11.2 | B |
| 33.11.7 | A |

| | |
|---|---|
| 33.1.1 | D |
| 33.5.2 | B |
| 33.6.5 | D |
| 33.10.1 | C |
| 33.10.6 | C |
| 33.11.3 | Q-Q |
| 33.12.1 | D |

| | |
|---|---|
| 33.2.1 | B |
| 33.6.1 | Q-Q |
| 33.7.1 | C |
| 33.10.2 | B |
| 33.10.7 | A |
| 33.11.4 | A |

| | |
|---|---|
| 33.3.1 | B |
| 33.6.2 | A |
| 33.7.2 | Q-Q |
| 33.10.3 | X |
| 33.10.8 | B |
| 33.11.5 | C |

| | |
|---|---|
| 33.4.1 | D |
| 33.6.3 | A |
| 33.8.1 | D |
| 33.10.4 | D |
| 33.11.1 | D |
| 33.11.6 | A |

## 34.0.1 UGC NET CSE | October 2022 | Part 1 | Question:: 59 top

Match List I with List II :

| | List I | | List II |
|---|---|---|---|
| (A) | Least frequently used | (I) | Memory is distributed among processors |
| (B) | Critical Section | (II) | Page replacement policy in cache memory |
| (C) | Loosely coupled multiprocessor system | (III) | Program section that once begin must complete execution before another processor access the same shared resource |
| (D) | Distributed operating system organization | (IV) | O/S routines are distributed among available processors. |

Choose the correct answer from the options given below :

**Options:-**

- (A)-(III), (B)-(II), (C)-(IV), (D)-(I) ,

**Option ID :- 1537,**

- (A)-(I), (B)-(II), (C)-(III), (D)-(IV) ,

**Option ID :- 1538,**

- (A)-(II), (B)-(III), (C)-(I), (D)-(IV),

**Option ID :- 1539,**

- (A)-(II), (B)-(I), (C)-(III), (D)-(IV) ,

Match List I with List II :

| List I | List II |
|---|---|
| (A) Least frequently used | (I) Memory is distributed among processors |
| (B) Critical Section | (II) Page replacement policy in cache memory |
| (C) Loosely coupled multiprocessor system | (III) Program section that once begin must complete execution before another processor access the same shared resource |
| (D) Distributed operating system organization | (IV) O/S routines are distributed among |

Choose the correct answer from the options given below :

A. (A)-(III), (B)-(II), (C)-(IV). (D)-(I)
B. (A)-(I), (B)-(II), (C)-(III), (D)-(IV)
C. (A)-(II), (B)-(III), (C)-(I), (D)-(IV)
D. (A)-(II), (B)-(I), (C)-(Iii), (D)-(IV)

ugcnetcse-oct2022-paper1 operating-system

Answer key

## 34.0.2 UGC NET CSE | December 2006 | Part 2 | Question: 36 top

An operating system is :

A. Collection of hardware components
B. Collection of input-output devices
C. Collection of software routines
D. All the above

ugcnetcse-dec2006-paper2

Answer key

## 34.0.3 UGC NET CSE | July 2018 | Part 2 | Question: 53 top

In a multi-user operating system, 30 requests are made to use a particular resource per hour, on an average. The probability that no requests are made in 40 minutes, when arrival pattern is a poisson distribution, is _____

A. $e^{-15}$
B. $1 - e^{-15}$
C. $1 - e^{-20}$
D. $e^{-20}$

ugcnetcse-july2018-paper2 operating-system

Answer key

### 34.0.4 UGC NET CSE | January 2017 | Part 2 | Question: 40 top

Distributed operating systems consist of:

A. Loosely coupled O.S. software on a loosely coupled hardware.
B. Loosely coupled O.S. software on a tightly coupled hardware.
C. Tightly coupled O.S. software on a loosely coupled hardware.
D. Tightly coupled O.S. software on a tightly coupled hardware.

ugcnetjan2017ii operating-system

Answer key

### 34.0.5 UGC NET CSE | December 2018 | Part 2 | Question: 74 top

Suppose $P, Q$ and $R$ are co-operating processes satisfying Mutual Exclusion condition. Then, if the process $Q$ is executing in its critical section then

A. Both '$P'$ and '$R'$ execute in critical section
B. Neither '$P'$ nor '$R'$ executes in their critical section
C. '$P'$ executes in critical section
D. '$R'$ executes in critical section

ugcnetcse-dec2018-paper2 operating-system

Answer key

### 34.0.6 UGC NET CSE | December 2007 | Part 2 | Question: 25 top

The performance of a file system depends upon the cache hit rate. If it takes $1$ msec to satisfy a request from the cache but $10$ msec to satisfy a request if a disk read is needed, then the mean time (ms) required for a hit rate $'h'$ is given by :

A. $1$ B. $h + 10(1 - h)$ C. $(1 - h) + 10h$ D. $10$

ugcnetcse-dec2007-paper2

Answer key

### 34.0.7 UGC NET CSE | December 2007 | Part 2 | Question: 37 top

A program has five virtual pages, numbered from $0$ to $4$. If the pages are referenced in the order $012301401234$, with three page frames, the total number of page faults with FIFO will be equal to :

A. $0$ B. $4$ C. $6$ D. $9$

ugcnetcse-dec2007-paper2

Answer key

### 34.0.8 UGC NET CSE | December 2007 | Part 2 | Question: 38 top

Average process size = $s$ bytes. Each page entry requires $e$ bytes. The optimum page size is given by :

A. $\sqrt{(se)}$ B. $\sqrt{(2se)}$ C. $s$ D. $e$

ugcnetcse-dec2007-paper2

Answer key

### 34.0.9 UGC NET CSE | December 2007 | Part 2 | Question: 40 top

The aging algorithm with a = $0.5$ is used to predict run times. The previous four runs from oldest to most recent are $40, 20, 20,$ and $15$ msec. The prediction for the next time will be :

A. $15$ msec. B. $25$ msec. C. $39$ msec. D. $40$ msec.

ugcnetcse-dec2007-paper2

Answer key

## 34.0.10 UGC NET CSE | December 2010 | Part 2 | Question: 19 top

Optical storage is a

A. High-speed direct access storage device.
B. Low-speed direct access storage device.
C. Medium-speed direct access storage device.
D. High-speed sequential access storage device.

ugcnetcse-dec2010-paper2 operating-system

Answer key

## 34.0.11 UGC NET CSE | December 2015 | Part 3 | Question: 42 top

In an operating system, indivisibility of operation means:

A. Operation is interruptable
B. Race Condition may occur
C. processor can not be prempted
D. All of the above

ugcnetcse-dec2015-paper3 operating-system

Answer key

## 34.0.12 UGC NET CSE | December 2006 | Part 2 | Question: 37 top

_____ is one of pre-emptive scheduling algorithm.

A. Shortest-Job-first
B. Round-robin
C. Priority based
D. Shortest-Job-next

ugcnetcse-dec2006-paper2

Answer key

## 34.0.13 UGC NET CSE | December 2006 | Part 2 | Question: 38 top

A software to create a Job Queue is called _____ .

A. Linkage editor
B. Interpreter
C. Driver
D. Spooler

ugcnetcse-dec2006-paper2

Answer key

## 34.0.14 UGC NET CSE | June 2010 | Part 2 | Question: 36 top

Match the following :

| | | | |
|---|---|---|---|
| (a) | Disk scheduling | 1. | Robin-round |
| (b) | Batch processing | 2. | SCAN |
| (c) | Time sharing | 3. | LIFO |
| (d) | Interrupt processing | 4. | FIFO |

**Codes :**

A. (a)-3, (b)-4, (c)-2, (d)-1
B. (a)-4, (b)-3, (c)-2, (d)-1
C. (a)-2, (b)-4, (c)-1, (d)-3
D. (a)-1, (b)-4, (c)-3, (d)-2

ugcnetcse-june2010-paper2 operating-system

Answer key

## 34.0.15 UGC NET CSE | December 2004 | Part 2 | Question: 36 top

Semaphores are used to :

A. Synchronise critical resources to prevent deadlock
B. Synchronise critical resources to prevent contention
C. Do I/o
D. Facilitate memory management

ugcnetcse-dec2004-paper2

Answer key

## 34.0.16 UGC NET CSE | June 2010 | Part 2 | Question: 40 top

Remote Computing Service involves the use of time sharing and _____.

Multi-processing

Interactive processing

Batch processing

Real-time processing

ugcnetcse-june2010-paper2 operating-system

Answer key

## 34.0.17 UGC NET CSE | December 2004 | Part 2 | Question: 37 top

In which of the following storage replacement strategies, is a program placed in the largest available hole in the memory ?

A. Best fit B. First fit C. Worst fit D. Buddy

ugcnetcse-dec2004-paper2

Answer key

## 34.0.18 UGC NET CSE | December 2004 | Part 2 | Question: 38 top

Remote computing system involves the use of timesharing systems and :

A. Real time processing
B. Batch processing
C. Multiprocessing
D. All of the above

ugcnetcse-dec2004-paper2

Answer key

## 34.0.19 UGC NET CSE | December 2004 | Part 2 | Question: 40 top

Match the following

| | |
|---|---|
| (a) Disk scheduling | (1) Round robin |
| (b) Batch processing | (2) Scan |
| (c) Time sharing | (3) LIFO |
| (d) Interrupt processing | (4) FIFO |

A. $a-3, b-4, c-2, d-1$
B. $a-4, b-3, c-2, d-1$
C. $a-2, b-4, c-1, d-3$
D. $a-3, b-4, c-1, d-2$

ugcnetcse-dec2004-paper2

Answer key

## 34.0.20 UGC NET CSE | June 2016 | Part 2 | Question: 37 top

Suppose there are $4$ processes in execution with $12$ instances of a Resource $R$ in a system.
The maximum need of each process and current allocation are given below :

| Process | Max Need | Current Allocation |
|---|---|---|
| $P_1$ | 8 | 3 |
| $P_2$ | 9 | 4 |
| $P_3$ | 5 | 2 |
| $P_4$ | 3 | 1 |

With reference to current allocation, is system safe? If so, what is the safe sequence?

A. No
B. Yes, $P_1P_2P_3P_4$
C. Yes, $P_4P_3P_1P_2$
D. Yes, $P_2P_1P_3P_4$

ugcnetcse-june2016-paper2 operating-system

Answer key

## 34.0.21 UGC NET CSE | January 2017 | Part 3 | Question: 66 top

Names of some of the Operating Systems are given below:

a. MS-DOS
b. XENIX
c. OS/2

In the above list, following operating systems didn't provide multiuser facility.

A. (a) only
B. (a) and (b)only
C. (b) and (c) only
D. (a),(b) and (c)

ugcnetcse-jan2017-paper3 operating-system

Answer key

## 34.0.22 UGC NET CSE | December 2012 | Part 3 | Question: 3 top

Match the following :

| | List-I | | List-II |
|---|---|---|---|
| a. | Critical region | i. | Hoares Monitor |
| b. | Wait/signal | ii. | Mutual Exclusion |
| c. | Working set | iii. | Principal of locality |
| d. | Dead lock | iv. | Circular wait |

**Codes :**

A. a-ii, b-i, c-iii, d-iv
B. a-i, b-ii, c-iv, d-iii
C. a-ii, b-iii, c-i, d-iv
D. a-i, b-iii, c-ii, d-iv

ugcnetcse-dec2012-paper3 operating-system

Answer key

## 34.0.23 UGC NET CSE | June 2012 | Part 3 | Question: 56 top

____ is sometimes said to be object oriented, because the only way to manipulate kernel objects is by invoking methods on their handles.

A. Windows NT
B. Windows XP
C. Windows VISTA
D. Windows 95/98

ugcnetcse-june2012-paper3 operating-system

Answer key

## 34.0.24 UGC NET CSE | December 2013 | Part 3 | Question: 69 top

To place a sound into a word document, following feature of windows is used

A. Clip board
B. Task switching
C. C Win App
D. OLE

ugcnetcse-dec2013-paper3 operating-system non-gate

Answer key

## 34.0.25 UGC NET CSE | December 2015 | Part 3 | Question: 39 top

Consider a system with twelve magnetic tape drives and three processes $P_1, P_2$ and $P_3$. process $P_1$ requires maximum ten tape drives, process $P_2$ may need as many as four tape drives and $P_3$ may need upto nine tape drives. Suppose that at time $t_1$, process $P_1$ is holding five tape drives, process $P_2$ is holding two tape drives and process $P_3$ is holding three tape drives, At time $t_1$, system is in:

A. safe state
B. unsafe state
C. deadlocked state
D. starvation state

ugcnetcse-dec2015-paper3 operating-system

Answer key

## 34.0.26 UGC NET CSE | December 2015 | Part 2 | Question: 29 top

A system has 4 processes and 5 allocatable resources. The current allocation and maximum needs are as follows:

| | Allocated | Maximum | Available |
|---|---|---|---|
| Process **A** | 1 0 2 1 1 | 1 1 2 1 3 | 0 0 x 1 1 |
| Process **B** | 2 0 1 1 0 | 2 2 2 1 0 | |
| Process **C** | 1 1 0 1 0 | 2 1 3 1 0 | |
| Process **D** | 1 1 1 1 0 | 1 1 2 2 1 | |

The smallest value of x for which the above system in safe state is

A. 1
B. 3
C. 2
D. 0

ugcnetcse-dec2015-paper2 operating-system

Answer key

## 34.0.27 UGC NET CSE | Junet 2015 | Part 3 | Question: 52 top

Dining Philosopher's problem is a

A. Producer - consumer problem
B. Classical IPC problem
C. Starvation problem
D. Synchronization primitive

ugcnetcse-june2015-paper3 operating-system

Answer key

## 34.0.28 UGC NET CSE | June 2009 | Part 2 | Question: 10 top

Assume $N$ segments in memory and a page size of $P$ bytes. The wastage on account of internal fragmentation is :

1. $NP/2$ bytes
2. $P/2$ bytes
3. $N/2$ bytes
4. $NP$ bytes

ugcnetcse-june2009-paper2

Answer key

## 34.0.29 UGC NET CSE | Junet 2015 | Part 3 | Question: 49 top

Match the following for operating system techniques with the most appropriate advantage :

| | List-I | | List-II |
|---|---|---|---|
| (a) | Spooling | (i) | Allows several jobs to improve CPU utilization |
| (b) | Multiprogramming | (ii) | Access to shared resources among geographically dispersed computers in a transparant way |
| (c) | Time sharing | (iii) | Overlapping I/O and computations |
| (d) | Distributed computing | (iv) | Allows many users to share a computer simultaneously by switching processor frequently |

**Codes :**

A. (a)-(iii), (b)-(i), (c)-(ii), (d)-(iv)
B. (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)
C. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)
D. (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)

ugcnetcse-june2015-paper3 operating-system

Answer key

## 34.0.30 UGC NET CSE | June 2014 | Part 3 | Question: 24 top

Match the following :

| | List – I | | List – II |
|---|---|---|---|
| a. | Timeout ordering protocol | i. | Wait for graph |
| b. | Deadlock prevention | ii. | Roll back |
| c. | Deadlock detection | iii. | Wait-die scheme |
| d. | Deadlock recovery | iv. | Thomas Write Rule |

**Codes :**

A. a-iv; b-iii; c-i; d-ii
B. a-iii; b-ii; c-iv; d-i
C. a-ii; b-i; c-iv; d-iii
D. a-iii; b-i; c-iv; d-iii

ugcnetjune2014iii operating-system

Answer key

## 34.0.31 UGC NET CSE | June 2009 | Part 2 | Question: 38 top

Variable partition memory management technique with compaction results in :

A. Reduction of fragmentation
B. Minimal wastage
C. Segment sharing
D. None of the above

ugcnetcse-june2009-paper2

## 34.0.32 UGC NET CSE | December 2007 | Part 2 | Question: 36 top

How many states can a process be in ?

A. 2
B. 3
C. 4
D. 5

ugcnetcse-dec2007-paper2

Answer key

## 34.0.33 UGC NET CSE | December 2012 | Part 3 | Question: 40 top

Which of the following operating system is better for implementing client-server network?

A. Windows 95
B. Windows 98
C. Windows 2000
D. All of these

ugcnetcse-dec2012-paper3 operating-system computer-networks non-gate

Answer key

## 34.0.34 UGC NET CSE | December 2015 | Part 3 | Question: 41 top

Match the following in Unix file system :

| | List-I | | List-II |
|---|---|---|---|
| (a) | Boot block | (i) | Information about file system |
| (b) | Super block | (ii) | Information about file |
| (c) | Inode table | (iii) | Storage space |
| (d) | Data block | (iv) | Code for making OS ready |

**Codes :**

A. (a)-(iv), (b)-(i), (c)-(ii), (d)-(iii)
B. (a)-(i), (b)-(iii), (c)-(ii), (d)-(iv)
C. (a)-(iii), (b)-(i), (c)-(ii), (d)-(iv)
D. (a)-(iv), (b)-(ii), (c)-(i), (d)-(iii)

operating-system ugcnetcse-dec2015-paper3

Answer key

### 34.0.35 UGC NET CSE | June 2014 | Part 2 | Question: 45 top

Which of the following is the correct value returned to the operating system upon the successful completion of a program ?

A. 0
B. 1
C. -1
D. Program do not return a value.

ugcnetcse-june2014-paper2 operating-system

Answer key

## 34.1 Applications In Windows (1) top

### 34.1.1 Applications In Windows: UGC NET CSE | December 2012 | Part 3 | Question: 35 top

In Win32, which function is used to create Windows Applications?

A. Win APP
B. Win API
C. Win Main
D. Win Void

ugcnetcse-dec2012-paper3 applications-in-windows operating-system non-gate

Answer key

## 34.2 Bankers Algorithm (1) top

### 34.2.1 Bankers Algorithm: UGC NET CSE | June 2013 | Part 3 | Question: 61 top

An operating system using banker's algorithm for deadlock avoidance has ten dedicated devices (of same type) and has three processes P1, P2 and P3 with maximum resource requirements of 4, 5 and 8 respectively. There are two states of allocation of devices as follows:

| | | | | |
|---|---|---|---|---|
| **State 1** | Processes | P1 | P2 | P3 |
| | Devices allocated | 2 | 3 | 4 |
| **State 2** | Processes | P1 | P2 | P3 |
| | Devices allocated | 0 | 2 | 4 |

Which of the following is correct?

A. State 1 is unsafe and State 2 is safe
B. State 1 is safe and State 2 is unsafe
C. Both State 1 and State 2 are safe
D. Both State 1 and State 2 are unsafe

ugcnetcse-june2013-paper3 operating-system bankers-algorithm deadlock-prevention-avoidance-detection

Answer key

## 34.3 Binary Semaphore (1) top

### 34.3.1 Binary Semaphore: UGC NET CSE | June 2010 | Part 2 | Question: 39 top

In order to allow only one process to enter its critical section, binary semaphore are initialized to

A. 0
B. 1
C. 2
D. 3

ugcnetcse-june2010-paper2 operating-system binary-semaphore

Answer key

## 34.4 Counting Semaphores (1) top

### 34.4.1 Counting Semaphores: UGC NET CSE | June 2019 | Part 2 | Question: 46 top

At a particular time of computation, the value of a counting semaphore is $7$. Then $20\ P$ (wait) operations and $15\ V$ (signal) operations are completed on this semaphore. What is the resulting value of the semaphore?

A. $28$ B. $12$ C. $2$ D. $42$

ugcnetcse-june2019-paper2 counting-semaphores

Answer key

## 34.5 Critical Section (1) top

### 34.5.1 Critical Section: UGC NET CSE | December 2014 | Part 2 | Question: 38 top

Which of the following conditions does not hold good for a solution to a critical section problem ?

A. No assumptions may be made about speeds or the number of $CPU$'s.
B. No two processes may be simultaneously inside their critical sections.
C. Processes running outside its critical section may block other processes.
D. Processes do not wait forever to enter its critical section.

ugcnetcse-dec2014-paper2 operating-system critical-section

Answer key

## 34.6 Deadlock Prevention Avoidance Detection (9) top

### 34.6.1 Deadlock Prevention Avoidance Detection: UGC NET CSE | August 2016 | Part 2 | Question: 36 top

Consider a system with seven processes $A$ through $G$ and six resources $R$ through $W$.
Resource ownership is as follows :
process $A$ holds $R$ and wants $T$
process $B$ holds nothing but wants $T$
process $C$ holds nothing but wants $S$
process $D$ holds $U$ and wants $S$ & $T$
process $E$ holds $T$ and wants $V$
process $F$ holds $W$ and wants $S$
process $G$ holds $V$ and wants $U$
Is the system deadlocked ? If yes, _____ processes are deadlocked.

A. No B. Yes, $A, B, C$ C. Yes, $D, E, G$ D. Yes, $A, B, F$

ugcnetcse-aug2016-paper2 operating-system deadlock-prevention-avoidance-detection

Answer key

### 34.6.2 Deadlock Prevention Avoidance Detection: UGC NET CSE | August 2016 | Part 2 | Question: 38 top

Consider a system having 'm' resources of the same type. These resources are shared by three processes $P_1, P_2$ and $P_3$ which have peak demands of $2, 5$ and $7$ resources respectively. For what value of $'m'$ deadlock will not occur ?

A. $70$ B. $14$ C. $13$ D. $7$

ugcnetcse-aug2016-paper2 operating-system deadlock-prevention-avoidance-detection

Answer key

### 34.6.3 Deadlock Prevention Avoidance Detection: UGC NET CSE | August 2016 | Part 3 | Question: 50 top

Consider a system which have '$n'$ number of processes and '$m'$ number of resource types. The time complexity of

the safety algorithm, which checks whether a system is in safe state or not, is of the order of :

A. $O(mn)$ B. $O(m^2n^2)$ C. $O(m^2n)$ D. $O(mn^2)$

ugcnetcse-aug2016-paper3 operating-system deadlock-prevention-avoidance-detection

Answer key

### 34.6.4 Deadlock Prevention Avoidance Detection: UGC NET CSE | December 2010 | Part 2 | Question: 40 top

A Dead-lock in an Operating System is

A. Desirable process
B. Undesirable process
C. Definite waiting process
D. All of the above

ugcnetcse-dec2010-paper2 operating-system deadlock-prevention-avoidance-detection

Answer key

### 34.6.5 Deadlock Prevention Avoidance Detection: UGC NET CSE | December 2011 | Part 2 | Question: 26 top

Dijikstra banking algorithm in an operating system, solves the problem of

A. Deadlock avoidance
B. Deadlock recovery
C. Mutual exclusion
D. Context switching

ugcnetcse-dec2011-paper2 operating-system deadlock-prevention-avoidance-detection

Answer key

### 34.6.6 Deadlock Prevention Avoidance Detection: UGC NET CSE | December 2013 | Part 3 | Question: 71 top

Simplest way of deadlock recovery is

A. Roll back
B. Preempt resource
C. Lock one of the processes
D. Kill one of the processes

ugcnetcse-dec2013-paper3 operating-system deadlock-prevention-avoidance-detection

Answer key

### 34.6.7 Deadlock Prevention Avoidance Detection: UGC NET CSE | December 2014 | Part 3 | Question: 52 top

An operating system has $13$ tape drives. There are three processes $P1, P2$ & $P3$. Maximum requirement of $P1$ is $11$ tape drives, $P2$ is $5$ tape drives and $P3$ is $8$ tape drives. Currently, $P1$ is allocated $6$ tape drives, $P2$ is allocated $3$ tape drives and $P3$ is allocated $2$ tape drives. Which of the following sequences represent a safe state?

1. $P2P1P3$
2. $P2P3P1$
3. $P1P2P3$
4. $P1P3P2$

ugcnetcse-dec2014-paper3 operating-system deadlock-prevention-avoidance-detection

Answer key

### 34.6.8 Deadlock Prevention Avoidance Detection: UGC NET CSE | December 2018 | Part 2 | Question: 70 top

Suppose a system has $12$ instances of some resource with $n$ processes competing for that resource. Each process may require $4$ instances of the resources. The maximum value of $n$ for which the system never enters into deadlock is

A. $3$ B. $4$ C. $5$ D. $6$

ugcnetcse-dec2018-paper2 operating-system deadlock-prevention-avoidance-detection

Answer key

### 34.6.9 Deadlock Prevention Avoidance Detection: UGC NET CSE | June 2019 | Part 2 | Question: 48 top

A computer has six tape drives with $n$ processes competing for them. Each process may need two drives. What is the maximum value of $n$ for the system to be deadlock free?

A. $5$ B. $4$ C. $3$ D. $6$

ugcnetcse-june2019-paper2 deadlock-prevention-avoidance-detection

Answer key

## 34.7 Delay (1) top

### 34.7.1 Delay: UGC NET CSE | June 2016 | Part 3 | Question: 53 top

A Multicomputer with 256 CPUs is organized as 16$\times$16 grid . What is the worst case delay(in hops) that a message might have to take

A. 16 B. 15 C. 32 D. 30

ugcnetcse-june2016-paper3 operating-system delay

Answer key

## 34.8 Demand Paging (1) top

### 34.8.1 Demand Paging: UGC NET CSE | December 2014 | Part 2 | Question: 40 top

In a demand paging memory system, page table is held in registers. The time taken to service a page fault is $8$ m.sec. if an empty frame is available or if the replaced page is not modified, and it takes $20$ m.secs., if the replaced page is modified. What is the average access time to service a page fault assuming that the page to be replaced is modified $70$% of the time ?

A. $11.6$ m.sec.
B. $16.4$ m.sec.
C. $28$ m.sec.
D. $14$ m.sec.

ugcnetcse-dec2014-paper2 operating-system demand-paging

Answer key

## 34.9 Dijkstras Bankers Algorithm (1) top

### 34.9.1 Dijkstras Bankers Algorithm: UGC NET CSE | September 2013 | Part 3 | Question: 69 top

A system contains $10$ units of resource of same type. The resource requirement and current allocation of these resources for three processes $\mathrm{P}, \mathrm{Q}$ and $\mathrm{R}$ are as follows :

| | P | Q | R |
|---|---|---|---|
| Maximum requirement | 8 | 7 | 5 |
| Current allocation | 4 | 1 | 3 |

Now, consider the following resource requests:

i. $\mathrm{P}$ makes a request for $2$ resource units
ii. $\mathrm{Q}$ makes request for $2$ resource units
iii. $\mathrm{R}$ makes a request for $2$ resource units

For a safe state, which of the following options must be satisfied?

A. Only request $\mathrm{i}$
B. Only request $\mathrm{ii}$
C. Only request $\mathrm{iii}$
D. Request $\mathrm{i}$ and $\mathrm{ii}$

ugcnetcse-sep2013-paper3 operating-system dijkstras-bankers-algorithm

Answer key

## 34.10 Directory Structure (1) top

### 34.10.1 Directory Structure: UGC NET CSE | December 2014 | Part 2 | Question: 23 top

The directory can be viewed as _____ that translates filenames into their directory entries.

A. Symbol table B. Partition C. Swap space D. Cache

ugcnetcse-dec2014-paper2 operating-system file-system directory-structure

Answer key

## 34.11 Disk (10) top

### 34.11.1 Disk: UGC NET CSE | December 2013 | Part 2 | Question: 49 top

How much space will be required to store the bit map of a 1.3 GB disk with 512 bytes block size?

A. 332.8 KB
B. 83.6 KB
C. 266.2 KB
D. 256.6 KB

operating-system disk ugcnetcse-dec2013-paper2

Answer key

### 34.11.2 Disk: UGC NET CSE | December 2015 | Part 2 | Question: 28 top

Consider a disk with 16384 bytes per track having a rotation time of 16 msec and average seek time of 40 msec. What is the time in msec to read a block of 1024 bytes from this disk?

A. 57 msec B. 49 msec C. 48 msec D. 17 msec

ugcnetcse-dec2015-paper2 operating-system disk

Answer key

### 34.11.3 Disk: UGC NET CSE | December 2018 | Part 2 | Question: 18 top

Consider a disk pack with $32$ surfaces, $64$ tracks and $512$ sectors per pack. $256$ bytes of data are stored in a bit serial manner in a sector. The number of bits required to specify a particular sector in the disk is

A. $18$ B. $19$ C. $20$ D. $22$

ugcnetcse-dec2018-paper2 operating-system disk

Answer key

### 34.11.4 Disk: UGC NET CSE | June 2013 | Part 3 | Question: 64, UGCNET-Dec2015-II: 49 top

A UNIX file system has 1 KB block size and 4-byte disk addresses. What is the maximum file size if the inode contains ten direct block entries, one single indirect block entry, one double indirect block entry and one triple indirect block entry?

A. 30 GB B. 64 GB C. 16 GB D. 1 GB

ugcnetcse-june2013-paper3 ugcnetcse-dec2015-paper2 operating-system disk

Answer key

### 34.11.5 Disk: UGC NET CSE | October 2020 | Part 2 | Question: 17 top

Suppose you have a Linux file system where the block size is $2K$ bytes, a disk address is $32$ bits, and an $i-$node contains the disk addresses of the first $12$ direct blocks of file, a single indirect block and a double indirect block. Approximately, what is the largest file that can be represented by an $i-$node?

A. $513$ Kbytes B. $513$ MBytes C. $537$ Mbytes D. $537$ KBytes

ugcnetcse-oct2020-paper2 operating-system disk

Answer key

## 34.11.6 Disk: UGC NET CSE | October 2020 | Part 2 | Question: 91 top

The question given below: concern a disk with a sector size of $512$ bytes, $2000$ tracks per surface, $50$ sectors per track, five double-sided platters, and average seek time of $10$ milliseconds.

If $T$ is the capacity of a track in bytes, and $S$ is the capacity of each surface in bytes, then $(T, S) =$ _____

A. $(50K, 50000K)$
B. $(25K, 25000K)$
C. $(25K, 50000K)$
D. $(40K, 36000K)$

ugcnetcse-oct2020-paper2 operating-system disk

Answer key

## 34.11.7 Disk: UGC NET CSE | October 2020 | Part 2 | Question: 92 top

The question given below: concern a disk with a sector size of $512$ bytes, $2000$ tracks per surface, $50$ sectors per track, five double-sided platters, and average seek time of $10$ milliseconds.

What is the capacity of the disk, in bytes?

A. $25,000K$
B. $500,000K$
C. $250,000K$
D. $50,000K$

ugcnetcse-oct2020-paper2 operating-system disk

Answer key

## 34.11.8 Disk: UGC NET CSE | October 2020 | Part 2 | Question: 93 top

The question given below: concern a disk with a sector size of $512$ bytes, $2000$ tracks per surface, $50$ sectors per track, five double-sided platters, and average seek time of $10$ milliseconds.

Given below are two statements:

Statement $I$: The disk has a total number of $2000$ cylinders.

Statement $II$: $51200$ bytes is not a valid block size for the disk.

In the light of the above statements, choose the correct answer from the options given below:

A. Both Statement $I$ and Statement $II$ are true
B. Both Statement $I$ and Statement $II$ are false
C. Statement $I$ is correct but Statement $II$ is false
D. Statement $I$ is incorrect but Statement $II$ is true

ugcnetcse-oct2020-paper2 operating-system disk

Answer key

## 34.11.9 Disk: UGC NET CSE | October 2020 | Part 2 | Question: 94 top

The question given below concern a disk with a sector size of $512$ bytes, $2000$ tracks per surface, $50$ sectors per track, five double-sided platters, and average seek time of $10$ milliseconds.

If the disk platters rotate at $5400$ rpm (revolutions per minute), then approximately what is the maximum rotational delay?

A. $0.011$ seconds
B. $0.11$ seconds
C. $0.0011$ seconds
D. $1.1$ seconds

ugcnetcse-oct2020-paper2 operating-system disk

Answer key

## 34.11.10 Disk: UGC NET CSE | October 2020 | Part 2 | Question: 95 top

The question given below concern a disk with a sector size of $512$ bytes, $2000$ tracks per surface, $50$ sectors per track, five double-sided platters, and average seek time of $10$ milliseconds.

If one track of data can be transferred per revolution, then what is the data transfer rate?

A. $2,850$ KBytes/second
B. $4,500$ KBytes/second
C. $5,700$ KBytes/second
D. $2,250$ KBytes/second

ugcnetcse-oct2020-paper2 operating-system disk

Answer key

## 34.12 Disk Cpu Memory Interrupt (1) top

### 34.12.1 Disk Cpu Memory Interrupt: UGC NET CSE | June 2019 | Part 2 | Question: 42 top

Match List-I with List-II:

| | List-I | | List-II |
|---|---|---|---|
| $(a)$ | Disk | $(i)$ | Thread |
| $(b)$ | CPU | $(ii)$ | Signal |
| $(c)$ | Memory | $(iii)$ | File system |
| $(d)$ | Interrupt | $(iv)$ | Virtual address space |

Choose the correct option from those given below:

A. a-i; b-ii; c-iii; d-iv
B. a-iii; b-i; c-iv; d-ii
C. a-ii; b-i; c-iv; d-iii
D. a-ii; b-iv; c-iii; d-i

ugcnetcse-june2019-paper2 disk-cpu-memory-interrupt

Answer key

## 34.13 Disk Scheduling (9) top

### 34.13.1 Disk Scheduling: UGC NET CSE | December 2012 | Part 2 | Question: 5 UGCNET-June2013-II: 47 top

If the disk head is located initially at 32, find the number of disk moves required with FCFS if the disk queue of I/O blocks requests are 98. 37, 14, 124, 65, 67.

A. 239
B. 310
C. 321
D. 325

ugcnetcse-dec2012-paper2 operating-system disk-scheduling ugcnetcse-june2013-paper2

Answer key

### 34.13.2 Disk Scheduling: UGC NET CSE | December 2013 | Part 2 | Question: 48 top

Consider a disk queue with request for input/output to block cylinders 98, 183, 37, 122, 14, 124, 65, 67 in that order. Assume that disk head is initially positioned at cylinder 53 and moving towards cylinder number 0. The total number of head movements using Shortest Seek Time First (SSTF) and SCAN algorithms are respectively

A. 236 and 252 cylinders
B. 640 and 236 cylinders
C. 235 and 640 cylinders
D. 235 and 252 cylinders

ugcnetcse-dec2013-paper2 operating-system disk-scheduling

Answer key

### 34.13.3 Disk Scheduling: UGC NET CSE | December 2014 | Part 3 | Question: 51 top

Consider an imaginary disk with $40$ cylinders. A request come to read a block on cylinder $11$. While the seek to cylinder $11$ is in progress, new requests come in for cylinders $1, 36, 16, 34, 9$ and $12$ in that order. The number of arm motions using shortest seek first algorithm is

A. $111$
B. $112$
C. $60$
D. $61$

ugcnetcse-dec2014-paper3 operating-system disk-scheduling

Answer key

### 34.13.4 Disk Scheduling: UGC NET CSE | January 2017 | Part 3 | Question: 50 top

Consider a disk queue with I/O requests on the following cylinders in their arriving order: $6, 10, 12, 54, 97, 73, 128, 15, 44, 110, 34, 45$. The disk head is assumed to be at cylinder $23$ and moving in the direction of decreasing number of cylinders. Total number of cylinders in the disk is $150$. The disk head movement using SCAN –scheduling algorithm is:

A. $172$
B. $173$
C. $227$
D. $228$

ugcnetcse-jan2017-paper3 operating-system disk-scheduling

Answer key

## 34.13.5 Disk Scheduling: UGC NET CSE | June 2012 | Part 3 | Question: 74 top

On a disk with 1000 cylinders (0 to 999) find the number of tracks, the disk arm must move to satisfy all the requests in the disk queue. Assume the last request service was at track 345 and the head is moving toward track 0. The queue in FIFO order contains requests for the following tracks:

123, 874, 692, 475, 105, 376

(Assume scan algorithm)

A. 2013
B. 1219
C. 1967
D. 1507

ugcnetcse-june2012-paper3 operating-system disk-scheduling

Answer key

## 34.13.6 Disk Scheduling: UGC NET CSE | June 2016 | Part 2 | Question: 38 top

If the Disk head is located initially at track 32, find the number of disk moves required with FCFS scheduling criteria if the disk queue of I/O blocks requests are 98, 37, 14, 124, 65, 67

A. 320
B. 322
C. 321
D. 319

ugcnetcse-june2016-paper2 operating-system disk-scheduling

Answer key

## 34.13.7 Disk Scheduling: UGC NET CSE | Junet 2015 | Part 2 | Question: 36 top

A disk drive has $100$ cylinders, numbered $0$ to $99$. Disk requests come to the disk driver for cylinders $12, 26, 24, 4, 42, 8$ and $50$ in that order. The driver is currently serving a request at a cylinder $24$. A seek takes $6$ msec per cylinder moved. How much seek time is needed for shortest seek time first (SSTF) algorithm?

A. $0.984$ sec
B. $0.396$ sec
C. $0.738$ sec
D. $0.42$ sec

ugcnetcse-june2015-paper2 operating-system disk-scheduling

Answer key

## 34.13.8 Disk Scheduling: UGC NET CSE | October 2020 | Part 2 | Question: 16 top

Consider a disk system having $60$ cylinders. Disk requests are received by a disk drive for cylinders $10, 22, 20, 2, 40, 6$ and $38$, in that order. Assuming the disk head is currently at cylinder $20$, what is the time taken to satisfy all the requests if it takes $2$ milliseconds to move from one cylinder to adjacent one and Shortest Seek Time First (SSTF) algorithm is used?

A. $240$ milliseconds
B. $96$ milliseconds
C. $120$ milliseconds
D. $112$ milliseconds

ugcnetcse-oct2020-paper2 operating-system disk-scheduling

Answer key

## 34.13.9 Disk Scheduling: UGC NET CSE | September 2013 | Part 2 | Question: 46 top

Consider the input/output (I/O) request made at different instants of time directed at a hypothetical disk having $200$ tracks as given in the following table :

| **Serial No.** | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| **TranckNo.** | 12 | 85 | 40 | 100 | 75 |
| **Time of Arrival** | 65 | 80 | 110 | 100 | 175 |

Assume that :

Current head position is at track no. $65$

Direction of last movement is towards higher number of tracks.

Current clock time is $160$ milliseconds

Head movement time per track is $1$ millisecond

"$\text{look}$" is a variant of "$\text{SCAN}$" disk-arm scheduling algorithm. In this algorithm, if no more I/O requests are left in current direction, the disk head reveres its direction. The seek time in Shortest Seek First (SSF) and "$\text{look}$" disk-arm scheduling algorithms respectively are :

A. $144$ and $123$ milliseconds
B. $143$ and $123$ milliseconds
C. $149$ and $124$ milliseconds
D. $256$ and $186$ milliseconds

ugcnetsep2013ii operating-system disk-scheduling

Answer key

## 34.14 Distributed Computing (1) top

### 34.14.1 Distributed Computing: UGC NET CSE | December 2012 | Part 3 | Question: 2 top

The efficiency (E) and speed up (sp) for Multiprocessor with p processors satisfies:

A. $E \leq p$ and $s_p \leq p$
B. $E \leq 1$ and $s_p \leq p$
C. $E \leq p$ and $s_p \leq 1$
D. $E \leq 1$ and $s_p \leq 1$

ugcnetcse-dec2012-paper3 operating-system distributed-computing

Answer key

## 34.15 Distributed System (1) top

### 34.15.1 Distributed System: UGC NET CSE | December 2008 | Part 2 | Question: 24 top

An example of distributed OS is:

A. Amoeba
B. UNIX
C. MS-DOS
D. MULTICS

ugcnetcse-dec2008-paper2 operating-system distributed-system

Answer key

## 34.16 Dynamic Linking (1) top

### 34.16.1 Dynamic Linking: UGC NET CSE | June 2016 | Part 2 | Question: 34 top

Which of the following is not typically a benefit of dynamic linking?

I. Reduction in overall program execution time
II. Reduction in overall space consumption in memory
III. Reduction in overall space consumption on disk
IV. Reduction in the cost of software updates

A. I and IV
B. I only
C. II and III
D. IV only

ugcnetcse-june2016-paper2 operating-system dynamic-linking

Answer key

## 34.17 Effective Memory Access (1) top

### 34.17.1 Effective Memory Access: UGC NET CSE | June 2009 | Part 2 | Question: 19 top

Suppose it takes $100$ ns to access a page table and $20$ ns to access associative memory with a $90\%$ hit rate, the average access time equals :

A. $28$
B. $20$
C. $90$
D. $100$

ugcnetcse-june2009-paper2 operating-system effective-memory-access

Answer key

## 34.18 File System (7) top

## 34.18.1 File System: UGC NET CSE | August 2016 | Part 3 | Question: 53 top

Consider a file currently consisting of $50$ blocks. Assume that the file control block and the index block is already in memory. If a block is added at the end (and the block information to be added is stored in memory), then how many disk $I/O$ operations are required for indexed (single-level) allocation strategy ?

A. $1$ B. $101$ C. $27$ D. $0$

ugcnetcse-aug2016-paper3 operating-system file-system

Answer key

## 34.18.2 File System: UGC NET CSE | December 2013 | Part 3 | Question: 72 top

The directory structure used in Unix file system is called

A. Hierarchical directory
B. Tree structured directory
C. Directed acrylic graph
D. Graph structured directory

ugcnetcse-dec2013-paper3 operating-system file-system

Answer key

## 34.18.3 File System: UGC NET CSE | December 2014 | Part 3 | Question: 50 top

How many disk blocks are required to keep list of free disk blocks in a $16$ GB hard disk with $1$ kB block size using linked list of free disk blocks ? Assume that the disk block number is stored in $32$ bits.

A. $1024$ blocks
B. $16794$ blocks
C. $20000$ blocks
D. $1048576$ blocks

ugcnetcse-dec2014-paper3 operating-system file-system

Answer key

## 34.18.4 File System: UGC NET CSE | June 2012 | Part 2 | Question: 10 top

Which command is the fastest among the following?

A. COPY TO <NEW FILE>
B. COPY STRUCTURE TO <NEW FILE>
C. COPY FILE <FILE 1> <FILE 2>
D. COPY TO MFILE-DAT DELIMITED

ugcnetcse-june2012-paper2 operating-system file-system

Answer key

## 34.18.5 File System: UGC NET CSE | June 2014 | Part 2 | Question: 34 top

Match the following :

| | List – I | | List – II |
|---|---|---|---|
| a. | Contiguous allocation | i. | This scheme supports very large file sizes. |
| b. | Linked allocation | ii. | This allocation technique supports only sequential files. |
| c. | Indexed allocation | iii. | The number of disks required to access file is minimal. |
| d. | Multi-level indexed | iv. | This technique suffers from maximum wastage of space in storing pointers. |

**Codes :**

A. a-iii; b-iv; c-ii; d-i
B. a-iii; b-ii; c-iv; d-i
C. a-i; b-ii; c-iv; d-iii
D. a-i; b-iv; c-ii; d-iii

ugcnetcse-june2014-paper2 operating-system file-system

Answer key

### 34.18.6 File System: UGC NET CSE | Junet 2015 | Part 3 | Question: 12 top

In the indexed scheme of blocks to a file, the maximum possible size of the file depends on:

A. The number of blocks used for index and the size of index
B. Size of Blocks and size of Address
C. Size of index
D. Size of block

ugcnetcse-june2015-paper3 operating-system file-system

Answer key

### 34.18.7 File System: UGC NET CSE | Junet 2015 | Part 3 | Question: 53 top

In _____ allocation method for disk block allocation in a file system, insertion and deletion of blocks in a file is easy

A. Index
B. Linked
C. Contiguous
D. Bit Map

ugcnetcse-june2015-paper3 operating-system file-system

Answer key

## 34.19 Fragmentation (1) top

### 34.19.1 Fragmentation: UGC NET CSE | July 2018 | Part 2 | Question: 56 top

Which of the following statements are true?

a. External Fragmentation exists when there is enough total memory space to satisfy a request but the available space is contigu
b. Internal Fragmentation occurs when memory allocation is made in fixed-size blocks
c. Compaction is a technique to overcome internal fragmentation

A. a and b only
B. a and c only
C. b and c only
D. a, b and c

ugcnetcse-july2018-paper2 operating-system fragmentation

Answer key

## 34.20 Hard Disk Drive (1) top

### 34.20.1 Hard Disk Drive: UGC NET CSE | December 2011 | Part 2 | Question: 29 top

The maximum amount of information that is available in one portion of the disk access arm for a removal disk pack (without further movement of the arm with multiple heads)

A. A plate of data
B. A cylinder of data
C. A track of data
D. A block of data

ugcnetcse-dec2011-paper2 operating-system system hard-disk-drive

## 34.21 Hit Ratio (1) top

### 34.21.1 Hit Ratio: UGC NET CSE | September 2013 | Part 2 | Question: 45 top

The hit ratio of a Transaction Look Aside Buffer (TLAB) is 80%. It takes 20 nanoseconds (ns) to search TLAB and 100 ns to access main memory. The effective memory access time is _____

A. 36 ns
B. 140 ns
C. 122 ns
D. 40 ns

ugcnetsep2013ii operating-system cache-memory hit-ratio

Answer key

## 34.22 Input Output (2) top

### 34.22.1 Input Output: UGC NET CSE | January 2017 | Part 2 | Question: 38 top

Match the following w.r.t Input/Output management :

| | List – I | | List – II |
|---|---|---|---|
| a. | Device controller | i. | Extracts information from the controller register and store it in data buf |
| b. | Device driver | ii. | I/O scheduling |
| c. | Interrupt handler | iii. | Performs data transfer |
| d. | Kernel I/O subsystem | iv. | Processing of I/O request |

| | $a$ | $b$ | $c$ | $d$ |
|---|---|---|---|---|
| A. | $iii$ | $iv$ | $i$ | $ii$ |
| B. | $ii$ | $i$ | $iv$ | $iii$ |
| C. | $iv$ | $i$ | $ii$ | $iii$ |
| D. | $i$ | $iii$ | $iv$ | $ii$ |

ugcnetjan2017ii operating-system input-output

Answer key

### 34.22.2 Input Output: UGC NET CSE | October 2020 | Part 2 | Question: 65 top

Match List I with List II

| | List I | | List II |
|---|---|---|---|
| $(A)$ | Handshaking | $(I)$ | I/O interface informs the CPU that device is ready for the transfer |
| $(B)$ | Programmed I/O | $(II)$ | requires two control signals working in opposite directions |
| $(C)$ | Interrupt-initiated I/O | $(III)$ | has local memory & control large set of I/O devices |
| $(D)$ | I/O processor | $(IV)$ | require CPU to check the I/O flag & perform transfer |

Choose the correct answer from the options given below:

A. $A-I, B-II, C-III, D-IV$
B. $A-II, B-IV, C-III, D-I$
C. $A-II, B-IV, C-I, D-III$
D. $A-IV, B-III, C-II, D-I$

Match $

ugcnetcse-oct2020-paper2 operating-system input-output

Answer key

## 34.23 Interrupts (2) top

### 34.23.1 Interrupts: UGC NET CSE | December 2011 | Part 2 | Question: 28 top

On receiving an interrupt from an $I/O$ device, the $CPU$

A. Halts for predetermined time.
B. Branches off to the interrupt service routine after completion of the current instruction.
C. Branches off to the interrupt service routine immediately.
D. Hands over control of address bus and data bus to the interrupting device.

ugcnetcse-dec2011-paper2 operating-system interrupts

Answer key

### 34.23.2 Interrupts: UGC NET CSE | December 2014 | Part 3 | Question: 02 top

For switching from a CPU user mode to the supervisor mode following type of interrupt is most appropriate

A. Internal interrupts
B. External interrupts
C. Software interrupts
D. None of the above

ugcnetcse-dec2014-paper3 operating-system interrupts

Answer key

## 34.24 Io Handling (1) top

### 34.24.1 Io Handling: UGC NET CSE | July 2018 | Part 2 | Question: 54 top

Normally user programs are prevented from handling I/O directly by I/O instructions in them. For CPUs having explicit I/O instructions, such I/O protection is ensured by having the I/O instructions privileged. In a CPU with memory mapped I/O, there is no explicit I/O instruction. Which one of the following is true for a CPU with memory mapped I/O?

A. I/O protection is ensured by operating system routines
B. I/O protection is ensured by a hardware trap
C. I/O protection is ensured during system configuration
D. I/O protection is not possible

ugcnetcse-july2018-paper2 operating-system io-handling

Answer key

## 34.25 Java (1) top

### 34.25.1 Java: UGC NET CSE | June 2012 | Part 3 | Question: 13 top

Which of the following is scheme to deal with deadlock?

A. Time out
B. Time in
C. Both A and B
D. None of the above

ugcnetcse-june2012-paper3 operating-system java deadlock-prevention-avoidance-detection

Answer key

## 34.26 Least Recently Used (2) top

### 34.26.1 Least Recently Used: UGC NET CSE | August 2016 | Part 2 | Question: 37 top

Suppose that the virtual Address space has eight pages and physical memory with four page frames. If $LRU$ page replacement algorithm is used, _____ number of page faults occur with the reference string.

0 2 1 3 5 4 6 3 7 4 7 3 3 5 5 3 1 1 1 7 2 3 4 1

A. $11$
B. $12$
C. $10$
D. $9$

ugcnetcse-aug2016-paper2 operating-system least-recently-used page-replacement

Answer key

### 34.26.2 Least Recently Used: UGC NET CSE | June 2019 | Part 2 | Question: 43 top

Consider that a process has been allocated $3$ frames and has a sequence of page referencing as $1, 2, 1, 3, 7, 4, 5, 6, 3, 1$. What shall be the difference in page faults for the above string using the algorithms of LRU and optimal page replacement for referencing the string?

A. $2$
B. $0$
C. $1$
D. $3$

ugcnetcse-june2019-paper2 page-replacement least-recently-used

Answer key

## 34.27 Linux (1) top

### 34.27.1 Linux: UGC NET CSE | July 2018 | Part 2 | Question: 55 top

Which UNIX/Linux command is used to make all files and sub-directions in the directory "progs" executable by all users?

A. chmod - R a + x progs
B. chmod - R 222 progs
C. chmod - X a + x progs
D. chmod - X 222 progs

ugcnetcse-july2018-paper2 unix linux operating-system non-gate

Answer key

## 34.28 Memory Management (8) top

### 34.28.1 Memory Management: UGC NET CSE | December 2008 | Part 2 | Question: 40 top

Which of the following $OS$ treats hardware as a file system?

A. $UNIX$
B. $DOS$
C. $Windows\ NT$
D. None of the above

ugcnetcse-dec2008-paper2 operating-system memory-management

Answer key

### 34.28.2 Memory Management: UGC NET CSE | December 2009 | Part 2 | Question: 39 top

A program is located in the smallest available hole in the memory is _____

(A) best – fit

(B) first – bit

(C) worst – fit

(D) buddy

ugcnetcse-dec2009-paper2 operating-system memory-management

Answer key

### 34.28.3 Memory Management: UGC NET CSE | December 2011 | Part 2 | Question: 30 top

Consider a logical address space of $8$ pages of $1024$ words mapped with memory of $32$ frames. How many bits are there in the physical address ?

1. $9$ bits
2. $11$ bits
3. $13$ bits
4. $15$ bits

ugcnetcse-dec2011-paper2 operating-system memory-management

Answer key

### 34.28.4 Memory Management: UGC NET CSE | December 2012 | Part 2 | Question: 14 top

Given a memory partitions of 100 K, 500 K, 200 K, 300 K and 600 K (in order) and processes of 212 K, 417 K, 112 K and 426 K (in order), using the first fit algorithm, in which partition would the process requiring 426 K be placed?

A. 500 K
B. 200 K
C. 300 K
D. 600 K

ugcnetcse-dec2012-paper2 operating-system memory-management

Answer key

### 34.28.5 Memory Management: UGC NET CSE | December 2012 | Part 2 | Question: 30 top

Which of the following memory allocation scheme suffers from external fragmentation?

A. Segmentation B. Pure demand pagingC. Swapping D. Paging

ugcnetcse-dec2012-paper2 operating-system memory-management

Answer key

### 34.28.6 Memory Management: UGC NET CSE | December 2015 | Part 3 | Question: 37 top

Match the following with respect to various memory management algorithms :

| | List-I | | List-II |
|---|---|---|---|
| (a) | Demand paging | (i) | degree of multiprogramming |
| (b) | Segmentation | (ii) | working set |
| (c) | Dynamic partitions | (iii) | supports user view of memory |
| (d) | Fixed partitions | (iv) | compaction |

**Codes :**

A. (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)
B. (a)-(ii), (b)-(iii), (c)-(i), (d)-(iv)
C. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)
D. (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)

operating-system memory-management ugcnetcse-dec2015-paper3

Answer key

### 34.28.7 Memory Management: UGC NET CSE | January 2017 | Part 3 | Question: 49 top

A memory management system has 64 pages with 512 bytes page size. Physical memory consists of 32 page frames. Number of bits required in logical and physical address are respectively:

A. 14 and 15 B. 14 and 29 C. 15 and 14 D. 16 and 32

ugcnetcse-jan2017-paper3 operating-system memory-management

Answer key

### 34.28.8 Memory Management: UGC NET CSE | Junet 2015 | Part 3 | Question: 51 top

What is the most appropriate function of Memory Management Unit (MMU)?

A. It is an associative memory to store TLB
B. It is a technique of supporting multiprogramming by creating dynamic partitions
C. It is a chip to map virtual address to physical address
D. It is an algorithm to allocate and deallocate main memory to a process

ugcnetcse-june2015-paper3 operating-system memory-management

Answer key

## 34.29 Mmu (1) top

### 34.29.1 Mmu: UGC NET CSE | December 2015 | Part 3 | Question: 38 top

Function of memory management unit is :

A. Address translation
B. Memory Allocation
C. Cache management
D. All of the above

ugcnetcse-dec2015-paper3 operating-system mmu

Answer key

## 34.30 Monitors (1) top

### 34.30.1 Monitors: UGC NET CSE | December 2014 | Part 3 | Question: 53 top

Monitor is an Interprocess Communication $(IPC)$ technique which can be described as

A. It is higher level synchronization primitive and is a collection of procedures, variables, and data structures grouped together in a special package.

B. It is a non-negative integer which apart from initialization can be acted upon by wait and signal operations.
C. It uses two primitives, send and receive which are system calls rather than language constructs.
D. It consists of the $IPC$ primitives implemented as system calls to block the process when they are not allowed to enter critical region to save $CPU$ time.

ugcnetcse-dec2014-paper3 operating-system monitors

Answer key

## 34.31 Multiprogramming Os (1) top

### 34.31.1 Multiprogramming Os: UGC NET CSE | December 2012 | Part 3 | Question: 7 top

Which of the following features will characterize an OS as multi-programmed OS?

a. More than one program is loaded into memory and executed
b. Program waits for certain events to occur
c. If the executing program is waiting, another program is immediately scheduled
d. Program is immediately sch

A. a only B. b only C. a and b only D. a and c only

ugcnetcse-dec2012-paper3 operating-system multiprogramming-os

Answer key

## 34.32 Mutual Exclusion (1) top

### 34.32.1 Mutual Exclusion: UGC NET CSE | June 2012 | Part 3 | Question: 65 top

Consider the methods used by processes $P_1$ and $P_2$ for accessing their critical sections. The initial values of shared Boolean variables $S_1$ and $S_2$ are randomly assigned,

| $P_1$ | $P_2$ |
|---|---|
| while ($S_1$==$S_2$); | while ($S_1$==S2); |
| critical section | critical section |
| $S_1$=$S_2$; | $S_1$=$S_2$; |

Which one of the following statements describes the properties achieved?

A. Mutual exclusion but not progress
B. Progress but not mutual exclusion
C. Neither mutual exclusion nor progress
D. Both mutual exclusion and progress

ugcnetcse-june2012-paper3 operating-system mutual-exclusion critical-section

Answer key

## 34.33 Page Fault (7) top

### 34.33.1 Page Fault: UGC NET CSE | August 2016 | Part 3 | Question: 52 top

Consider the following page reference string :

$1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6$

Which of the following options, gives the correct number of page faults related to LRU, FIFO, and optimal page replacement algorithms respectively, assuming $05$ page frames and all frames are initially empty ?

A. $10, 14, 8$ B. $8, 10, 7$ C. $7, 10, 8$ D. $7, 10, 7$

ugcnetcse-aug2016-paper3 operating-system page-fault

Answer key

### 34.33.2 Page Fault: UGC NET CSE | December 2009 | Part 2 | Question: 37 top

A page fault

(A) is an error specific page.
(B) is an access to the page not currently in memory.
(C) occur when a page program occur in a page memory.
(D) page used in the previous page reference

ugcnetcse-dec2009-paper2 operating-system page-fault

### 34.33.3 Page Fault: UGC NET CSE | December 2015 | Part 2 | Question: 27 top

Suppose that the number of instructions executed between page fault is directly proportional to the number of page frames allocated to a program. If the available memory is doubled, the mean interval between the page faults is also doubled. Further, consider that a normal instruction takes one microsecond, but if a page fault occurs, it takes 2001 microseconds. If a program takes 60 sec to run, during which time it gets 15,000 page faults, how long would it take to run twice as much memory were available?

A. 60 sec B. 30 sec C. 45 sec D. 10 sec

ugcnetcse-dec2015-paper2 operating-system page-fault

Answer key

### 34.33.4 Page Fault: UGC NET CSE | December 2018 | Part 2 | Question: 72 top

Suppose for a process $P$, reference to pages in order are $1, 2, 4, 5, 2, 1, 2, 4$. Assume that main memory can accomodate $3$ pages and the main memory has already $1$ and $2$ in the order $1$ – first, $2$ – second. At this moment, assume FIFO Page Replacement Algorithm is used then the number of page faults that occur to complete the execution of process $P$ is

A. $4$ B. $3$ C. $5$ D. $6$

ugcnetcse-dec2018-paper2 operating-system page-replacement page-fault

Answer key

### 34.33.5 Page Fault: UGC NET CSE | July 2018 | Part 2 | Question: 58 top

Consider a virtual page reference string 1, 2, 3, 2, 4, 2, 5, 2, 3, 4. Suppose LRU page replacement algorithm is implemented with 3 page frames in main memory. Then the number of page faults are _____

A. 5 B. 7 C. 9 D. 10

ugcnetcse-july2018-paper2 operating-system page-fault paging

Answer key

### 34.33.6 Page Fault: UGC NET CSE | June 2016 | Part 2 | Question: 36 top

Consider the reference string:

0 1 2 3 0 1 4 0 1 2 3 4

If FIFO page replacement algorithm is used, then the number of page faults with three page frames and four page frames are ____ and ___ respectively.

A. 10, 9 B. 9, 9 C. 10, 10 D. 9, 10

ugcnetcse-june2016-paper2 operating-system page-replacement page-fault

Answer key

### 34.33.7 Page Fault: UGC NET CSE | September 2013 | Part 3 | Question: 23 top

Match the following :

| | | | |
|---|---|---|---|
| (a) | Dangling pointer | (i) | Buffer replacement policy |
| (b) | Page fault | (ii) | Variable-length records |
| (c) | List representation | (iii) | Object identifier |
| (d) | Toss-immediate | (iv) | Pointer-swizzling |

**Codes :**

A. (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)
B. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)
C. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)
D. (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)

ugcnetcse-sep2013-paper3 operating-system page-fault

Answer key

## 34.34 Page Replacement (5) top

### 34.34.1 Page Replacement: UGC NET CSE | June 2012 | Part 2 | Question: 33 top

Consider the following page trace:

4,3,2,1,4,3,5,4,3,2,1,5

Percentage of page fault that would occur if FIFO page replacement algorithm is used with number of frames for the JOB m=4 will be

A. 8 B. 9 C. 10 D. 12

operating-system page-replacement ugcnetcse-june2012-paper2

Answer key

### 34.34.2 Page Replacement: UGC NET CSE | June 2014 | Part 3 | Question: 35 top

Consider a program that consists of $8$ pages (from $0$ to $7$) and we have $4$ page frames in the physical memory for the pages. The page reference string is :

$1\ 2\ 3\ 2\ 5\ 6\ 3\ 4\ 6\ 3\ 7\ 3\ 1\ 5\ 3\ 6\ 3\ 4\ 2\ 4\ 3\ 4\ 5\ 1$

The number of page faults in LRU and optimal page replacement algorithms are respectively (without including initial page faults to fill available page frames with pages) :

A. $9$ and $6$ B. $10$ and $7$ C. $9$ and $7$ D. $10$ and $6$

ugcnetjune2014iii operating-system page-replacement

Answer key

### 34.34.3 Page Replacement: UGC NET CSE | Junet 2015 | Part 2 | Question: 38 top

A LRU page replacement is used with $4$ page frames and eight pages. How many page faults will occur with the reference string $0172327103$ if the four frames are initially empty?

A. $6$ B. $7$ C. $5$ D. $8$

ugcnetcse-june2015-paper2 operating-system page-replacement

Answer key

### 34.34.4 Page Replacement: UGC NET CSE | October 2020 | Part 2 | Question: 15 top

Consider a hypothetical machine with $3$ pages of physical memory, $5$ pages of virtual memory, and $< A, B, C, D, A, B, E, A, B, C, D, E, B, A, B >$ as the stream of page reference by an application. If $P$ and $Q$ are the number of page faults that the application would incur with FIFO and LRU page replacement algorithms respectively, then $(P, Q) =$ _____(Assuming enough space for storing $3$ page frames)

A. $(11,10)$ B. $(12,11)$ C. $(10,11)$ D. $(11,12)$

ugcnetcse-oct2020-paper2 operating-system page-replacement

Answer key

### 34.34.5 Page Replacement: UGC NET CSE | September 2013 | Part 3 | Question: 71 top

Consider a main memory with three page frames for the following page reference string:

5, 4, 3, 2, 1, 4, 3, 5, 4, 3, 4, 1, 4

Assuming that the execution of process is initialized after loading page 5 in memory,, the number of page faults in FIFO and second chance replacement respectively are

A. 8 and 9 B. 10 and 11 C. 7 and 9 D. 9 and 8

ugcnetcse-sep2013-paper3 operating-system page-replacement

Answer key

## 34.35 Paging (8) top

### 34.35.1 Paging: UGC NET CSE | August 2016 | Part 3 | Question: 51 top

An operating system supports a paged virtual memory, using a central processor with a cycle time of one microsecond. It costs an additional one microsecond to access a page other than the current one. Pages have $1000$ words, and the paging device is a drum that rotates at $3000$ revolutions per minute and transfers one million words per second. Further, one percent of all instructions executed accessed a page other than the current page. The instruction that accessed another page, $80\%$ accessed a page already in memory and when a new page was required, the replaced page was modified $50\%$ of the time. What is the effective access time on this system, assuming that the system is running only one process and the processor is idle during drum transfers ?

A. $30$ microseconds
B. $34$ microseconds
C. $60$ microseconds
D. $68$ microseconds

ugcnetcse-aug2016-paper3 operating-system paging

Answer key

### 34.35.2 Paging: UGC NET CSE | December 2010 | Part 2 | Question: 39 top

Page making process from main memory to disk is called

A. Interruption
B. Termination
C. Swapping
D. None of the above

ugcnetcse-dec2010-paper2 operating-system paging

### 34.35.3 Paging: UGC NET CSE | December 2014 | Part 2 | Question: 39 top

For the implementation of a paging scheme, suppose the average process size be $x$ bytes, the page size be $y$ bytes, and each page entry requires $z$ bytes. The optimum page size that minimizes the total overhead due to the page table and the internal fragmentation loss is given by

A. $\frac{x}{2}$
B. $\frac{xz}{2}$
C. $\sqrt{2xz}$
D. $\frac{\sqrt{xz}}{2}$

ugcnetcse-dec2014-paper2 operating-system paging

Answer key

### 34.35.4 Paging: UGC NET CSE | January 2017 | Part 2 | Question: 37 top

In a paging system, it takes $30$ ns to search translation Look-a-side Buffer (TLB) and $90$ ns to access the main memory. If the TLB hit ratio is $70\%$, the effective memory access time is :

A. $48$ ns
B. $147$ns
C. $120$ns
D. $84$ns

ugcnetjan2017ii operating-system paging

Answer key

### 34.35.5 Paging: UGC NET CSE | July 2018 | Part 2 | Question: 52 top

In a paged memory, the page hit ratio is 0.40. The time required to access a page in secondary memory is equal to 120 ns. The time required to access a page in primary memory is 15 ns. The average time required to access a page is ____

A. 105
B. 68
C. 75
D. 78

ugcnetcse-july2018-paper2 operating-system paging

Answer key

### 34.35.6 Paging: UGC NET CSE | July 2018 | Part 2 | Question: 57 top

Page information memory is also called as Page Table. The essential contents in each entry of a page table is/are ____

A. Page Access information
B. Virtual Page number
C. Page Frame number
D. Both virtual page number and Page frame number

ugcnetcse-july2018-paper2 operating-system paging

Answer key

### 34.35.7 Paging: UGC NET CSE | June 2013 | Part 3 | Question: 59 top

A job has four pages A, B, C, D and the main memory has two page frames only. The job needs to process its pages in following order:

ABACABDBACD

Assuming that the page interrupt occurs when a new page is brought in the main memory, irrespective of whether the page is swapped out or not. The number of page interrupts in FIFO and LRU page replacement algorithms are

A. 9 and 7
B. 7 and 6
C. 9 and 8
D. 8 and 6

ugcnetcse-june2013-paper3 operating-system paging

Answer key

### 34.35.8 Paging: UGC NET CSE | June 2019 | Part 2 | Question: 47 top

The minimum number of page frames that must be allocated to a running process in a virtual memory environment is determined by

A. page size
B. physical size of memory
C. the instruction set architecture
D. number of processes in memory

ugcnetcse-june2019-paper2 virtual-memory paging

Answer key

## 34.36 Pipelining (1) top

### 34.36.1 Pipelining: UGC NET CSE | September 2013 | Part 2 | Question: 50 top

The speed up of a pipeline processing over an equivalent non-pipeline processing is defined by the ration:

where $n \rightarrow$ no. of tasks

$t_n \rightarrow$ time of completion of each tasks

$k \rightarrow$ no. of segments of pipeline

$t_p \rightarrow$ clock cycle time

$S \rightarrow$ speed up ratio

A. $S = \frac{nt_n}{(k+n-1)t_p}$
B. $S = \frac{nt_n}{(k+n+1)t_p}$
C. $S = \frac{nt_n}{(k-n+1)t_p}$
D. $S = \frac{(k+n-1)t_p}{nt_n}$

ugcnetsep2013ii operating-system pipelining

Answer key

## 34.37 Process (2) top

### 34.37.1 Process: UGC NET CSE | December 2014 | Part 2 | Question: 37 top

A specific editor has $200K$ of program text, $15K$ of initial stack, $50K$ of initialized data, and $70K$ of bootstrap code. If five editors are started simultaneously, how much physical memory is needed if shared text is used?

A. $1135K$
B. $335K$
C. $1065K$
D. $320K$

ugcnetcse-dec2014-paper2 operating-system process

Answer key

### 34.37.2 Process: UGC NET CSE | June 2013 | Part 3 | Question: 63 top

Working set model is used in memory management to implement the concept of

A. Swapping
B. Principal of Locality
C. Segmentation
D. Thrashing

ugcnetcse-june2013-paper3 operating-system process

Answer key

## 34.38 Process Model (2) top

### 34.38.1 Process Model: UGC NET CSE | December 2008 | Part 2 | Question: 21 top

N processes are waiting for $I/O$. A process spends a fraction $p$ of its time in $I/O$ wait state. The $CPU$ utilization is given by :

1. 1-p-N
2. 1-pN
3. pN
4. p-N

ugcnetcse-dec2008-paper2 operating-system process-model

Answer key

### 34.38.2 Process Model: UGC NET CSE | December 2008 | Part 2 | Question: 22 top

If holes are half as large as processes, the fraction of memory wasted in holes is :

A. $2/3$
B. $1/2$
C. $1/3$
D. $1/5$

ugcnetcse-dec2008-paper2 operating-system process-model

Answer key

## 34.39 Process Scheduling (20) top

### 34.39.1 Process Scheduling: UGC NET CSE | August 2016 | Part 2 | Question: 39 top

Five jobs $A, B, C, D$ and $E$ are waiting in Ready Queue. Their expected runtimes are $9, 6, 3, 5$ and $x$ respectively. All jobs entered in Ready queue at time zero. They must run in _____ order to minimize average response time if $3 < x < 5$.

A. $B, A, D, E, C$
B. $C, E, D, B, A$
C. $E, D, C, B, A$
D. $C, B, A, E, D$

ugcnetcse-aug2016-paper2 operating-system process-scheduling

Answer key

### 34.39.2 Process Scheduling: UGC NET CSE | August 2016 | Part 2 | Question: 40 top

Consider three CPU intensive processes $P1, P2, P3$ which require $20, 10$ and $30$ units of time, arrive at times $1, 3$ and $7$ respectively. Suppose operating system is implementing Shortest Remaining Time first (preemptive scheduling) algorithm, then _____ context switches are required (suppose context switch at the beginning of Ready queue and at the end of Ready queue are not counted).

A. $3$
B. $2$
C. $4$
D. $5$

ugcnetcse-aug2016-paper2 operating-system process-scheduling

Answer key

### 34.39.3 Process Scheduling: UGC NET CSE | December 2009 | Part 2 | Question: 36 top

In the process management Round-robin method is essentially the pre-emptive version of _____

(A) FILO

(B) FIFO

(C) SSF

(D) Longest time first

ugcnetcse-dec2009-paper2 operating-system process-scheduling

Answer key

### 34.39.4 Process Scheduling: UGC NET CSE | December 2012 | Part 2 | Question: 20 top

The problem of indefinite blockage of low-priority jobs in general priority scheduling algorithm can be solved using:

A. Parity bit B. Aging C. Compaction D. Timer

ugcnetcse-dec2012-paper2 operating-system process-scheduling

Answer key

### 34.39.5 Process Scheduling: UGC NET CSE | December 2013 | Part 2 | Question: 46 top

Consider a preemptive priority based scheduling algorithm based on dynamically changing priority. Larger priority number implies higher priority. When the process is waiting for CPU in the ready queue (but not yet started execution), its priority changes at a rate a=2. When it starts running, its priority changes at a rate b=1. All the processes are assigned priority value 0 when they enter ready queue. Assume that the following processes want to execute:

| Process ID | Arrival Time | Service Time |
|---|---|---|
| P1 | 0 | 4 |
| P2 | 1 | 1 |
| P3 | 2 | 2 |
| P4 | 3 | 1 |

The time quantum q=1. When two processes want to join ready queue simultaneously, the process which has not executed recently is given priority. The finish time of processes P1, P2, P3 and P4 will respectively be

A. 4, 5, 7 and 8 B. 8, 2, 7 and 5 C. 2, 5, 7 and 8 D. 8, 2, 5 and 7

ugcnetcse-dec2013-paper2 operating-system process-scheduling

Answer key

### 34.39.6 Process Scheduling: UGC NET CSE | December 2014 | Part 2 | Question: 36 top

Consider the following justifications for commonly using the two-level $CPU$ scheduling:

I. It is used when memory is too small to hold all the ready processes.

II. Because its performance is same as that of the $FIFO$.

III. Because it facilitates putting some set of processes into memory and a choice is made from that.

IV. Because it does not allow to adjust the set of in-core processes.

Which of the following is true ?

A. $I$,$III$ and $IV$ B. $I$ and $II$ C. $III$ and $IV$ D. $I$ and $III$

ugcnetcse-dec2014-paper2 operating-system process-scheduling

Answer key

### 34.39.7 Process Scheduling: UGC NET CSE | January 2017 | Part 3 | Question: 52 top

Some of the criteria for calculation of priority of a process are:

a. Processor utilization by an individual process.
b. Weight assigned to a user or group of users
c. Processor utilization by a user or group of processes

In fair scheduler, priority is calculated based on:

A. only (a) and (b)
B. only (a) and (c)
C. (a) ,(b) and (c)
D. only (b) and (c)

ugcnetcse-jan2017-paper3 operating-system process-scheduling

Answer key

## 34.39.8 Process Scheduling: UGC NET CSE | July 2018 | Part 2 | Question: 60 top

In which of the following scheduling criteria, context switching will never take place?

A. ROUND ROBIN
B. Preemptive SJF
C. Non-preemptive SJF
D. Preemptive priority

ugcnetcse-july2018-paper2 process-scheduling operating-system

Answer key

## 34.39.9 Process Scheduling: UGC NET CSE | June 2010 | Part 2 | Question: 38 top

_____ is one of pre-emptive scheduling algorithm.

A. $RR$
B. $SSN$
C. $SSF$
D. Priority based

ugcnetcse-june2010-paper2 operating-system process-scheduling

Answer key

## 34.39.10 Process Scheduling: UGC NET CSE | June 2012 | Part 2 | Question: 29 top

Pre-emptive scheduling is the strategy of temporarily suspending a running process

A. before the CPU time slice expires
B. to allow starving processes to run
C. when it requires I/O
D. to avoid collision

operating-system process-scheduling ugcnetcse-june2012-paper2

Answer key

## 34.39.11 Process Scheduling: UGC NET CSE | June 2012 | Part 2 | Question: 30 top

In round robin CPU scheduling as time quantum is increased the average turn around time

A. increases
B. decreases
C. remains constant
D. varies irregularly

ugcnetcse-june2012-paper2 operating-system process-scheduling

Answer key

## 34.39.12 Process Scheduling: UGC NET CSE | June 2013 | Part 3 | Question: 58 top

Consider the following processes with time slice of 4 milliseconds (I/O requests are ignored):

| Process | A | B | C | D |
|---|---|---|---|---|
| Arrival time | 0 | 1 | 2 | 3 |
| CPU Cycle | 8 | 4 | 9 | 5 |

The average turnaround time of these processes will be

A. 19.25 milliseconds
B. 18.25 milliseconds
C. 19.5 milliseconds
D. 18.5 milliseconds

ugcnetcse-june2013-paper3 operating-system process-scheduling

Answer key

## 34.39.13 Process Scheduling: UGC NET CSE | June 2014 | Part 2 | Question: 32 top

Match the following :

| | List – I | | List – II |
|---|---|---|---|
| a. | Multilevel feedback queue | i. | Time-slicing |
| b. | FCFS | ii. | Criteria to move processes between queues |
| c. | Shortest Process next | iii. | Batch Processing |
| d. | Round robin scheduling | iv. | Exponential smoothening |

**Codes :**

A. a-i; b-iii; c-ii; d-iv
B. a-iv; b-iii; c-ii; d-i
C. a-iii; b-i; c-iv; d-i
D. a-ii; b-iii; c-iv; d-i

ugcnetcse-june2014-paper2 operating-system process-scheduling

Answer key

## 34.39.14 Process Scheduling: UGC NET CSE | June 2014 | Part 3 | Question: 34 top

Consider a uniprocessor system where new processes arrive at an average of five processes per minute and each process needs an average of $6$ seconds of service time. What will be the CPU utilization ?

A. $80$ %
B. $50$ %
C. $60$ %
D. $30$ %

ugcnetjune2014iii operating-system process-scheduling

Answer key

## 34.39.15 Process Scheduling: UGC NET CSE | June 2014 | Part 3 | Question: 36 top

Which of the following statements is not true about disk-arm scheduling algorithms ?

A. SSTF (shortest seek time first) algorithm increases performance of FCFS.
B. The number of requests for disk service are not influenced by file allocation method.
C. Caching the directories and index blocks in main memory can also help in reducing disk arm movements.
D. SCAN and C-SCAN algorithms are less likely to have a starvation problem.

ugcnetjune2014iii operating-system process-scheduling

Answer key

## 34.39.16 Process Scheduling: UGC NET CSE | June 2016 | Part 2 | Question: 40 top

A scheduling Algorithm assigns priority proportional to the waiting time of a process. Every process starts with priority zero (lowest priority). The scheduler reevaluates the process priority for every 'T' time units and declares next process to be scheduled. If teh process have no I/O operations and all arrive at time zero, then the schduler implements ___ criteria

A. Priority scheduling
B. Rond Robin Scheduling
C. Shortest Job First
D. FCFS

ugcnetcse-june2016-paper2 operating-system process-scheduling

Answer key

## 34.39.17 Process Scheduling: UGC NET CSE | June 2019 | Part 2 | Question: 45 top

Consider three CPU intensive processes, which require $10$, $20$ and $30$ units of time and arrive at times $0$, $2$ and $6$ respectively. How many context switches are needed if the operating system implements a shortest remaining time first scheduling algorithm? Do not count the context switches at time zero and at the end.

A. $4$
B. $2$
C. $3$
D. $1$

ugcnetcse-june2019-paper2 process-scheduling

Answer key

## 34.39.18 Process Scheduling: UGC NET CSE | Junet 2015 | Part 3 | Question: 50 top

Which of the following statements is not true for Multi Level Feedback Queue processor scheduling

algorithm?

A. Queues have different priorities
B. Each queue may have different scheduling algorithm
C. Processes are permanently assigned to a queue
D. This algorithm can be configured to match a specific system under design

ugcnetcse-june2015-paper3 operating-system process-scheduling

Answer key

### 34.39.19 Process Scheduling: UGC NET CSE | September 2013 | Part 2 | Question: 44 top

Match the following :

| | List – I Process state transition | | List – II Reason for transition |
|---|---|---|---|
| a. | Ready → Running | i. | Request made by the process is satisfied or an event for which it was waiting to occurs |
| b. | Blocked → Ready | ii. | Process wishes to wait for some action by another process |
| c. | Running → Blocked | iii. | The process is dispatched |
| d. | Running → Ready | iv. | The Process is preempted |

**Codes :**

A. a-iii, b-i, c-ii, d-iv
B. a-iv, b-i, c-iii, d-ii
C. a-iv, b-iii, c-i, d-ii
D. a-iii, b-iv, c-ii, d-i

ugcnetsep2013ii operating-system process-scheduling

Answer key

### 34.39.20 Process Scheduling: UGC NET CSE | September 2013 | Part 3 | Question: 70 top

Consider the following set of processes with the length of CPU burst time in milliseconds (ms) :

| Process | A | B | C | D | E |
|---|---|---|---|---|---|
| Burst time | 6 | 1 | 2 | 1 | 5 |
| Priority | 3 | 1 | 3 | 4 | 2 |

Assume that processes are stored in ready queue in following order :

A – B – C – D – E

Using round robin scheduling with time slice of 1 ms, the average turn around time is

A. 8.4 ms
B. 12.4 ms
C. 9.2 ms
D. 9.4 ms

ugcnetcse-sep2013-paper3 operating-system process-scheduling

Answer key

## 34.40 Process Synchronization (2) top

### 34.40.1 Process Synchronization: UGC NET CSE | December 2018 | Part 2 | Question: 69 top

To overcome difficulties in Readers-Writers problem, which of the following statement/s is/are ***true***?

i. Writers are given exclusive access to shared objects.
ii. Readers are given exclusive access to shared objects.
iii. Both Readers and Writers are given exclusive access to shared objects.

Choose the correct answer from the code given below :

*Code* :

A. (i) only B. (ii) only C. (iii) only D. Both (ii) and (iii)

ugcnetcse-dec2018-paper2 operating-system process-synchronization

Answer key

### 34.40.2 Process Synchronization: UGC NET CSE | July 2018 | Part 2 | Question: 51 top

At a particular time of computation, the value of a counting semaphore is 10. Then 12 P operations and "x" V operations were performed on this semaphore. If the final value of semaphore is 7, x will be

A. 8 B. 9 C. 10 D. 11

ugcnetcse-july2018-paper2 operating-system process-synchronization

Answer key

## 34.41 Ram (1) top

### 34.41.1 Ram: UGC NET CSE | December 2008 | Part 2 | Question: 41 top

In which of the following, ready to execute processes must be present in $RAM$ ?

A. multiprocessing
B. multiprogramming
C. multitasking
D. all of the above

ugcnetcse-dec2008-paper2 operating-system ram

Answer key

## 34.42 Resource Allocation (2) top

### 34.42.1 Resource Allocation: UGC NET CSE | June 2012 | Part 2 | Question: 31 top

Resources are allocated to the process on non-sharable basis is

A. mutual exclusion
B. hold and wait
C. no pre-emption
D. circular wait

ugcnetcse-june2012-paper2 operating-system resource-allocation

Answer key

### 34.42.2 Resource Allocation: UGC NET CSE | June 2014 | Part 2 | Question: 33 top

Consider a system with five processes $P_0$ through $P_4$ and three resource types $R_1$, $R_2$ and $R_3$ . Resource type $R_1$ has $10$ instances, $R_2$ has $5$ instances and $R_3$ has $7$ instances. Suppose that at time $T_0$, the following snapshot of the system has been taken :

**Allocation**

| | $R_1$ | $R_2$ | $R_3$ |
|---|---|---|---|
| $P_0$ | 0 | 1 | 0 |
| $P_1$ | 2 | 0 | 0 |
| $P_2$ | 3 | 0 | 2 |
| $P_3$ | 2 | 1 | 1 |
| $P_4$ | 0 | 2 | 2 |

**Max**

| $R_1$ | $R_2$ | $R_3$ |
|---|---|---|
| 7 | 5 | 3 |
| 3 | 2 | 2 |
| 9 | 0 | 2 |
| 2 | 2 | 2 |

| | | |
|---|---|---|
| 4 | 3 | 3 |

**Available**

| $R_1$ | $R_2$ | $R_3$ |
|---|---|---|
| 3 | 3 | 2 |

Assume that now the process $P_1$ requests one additional instance of type $R_1$ and two instances of resource type $R_3$. The state resulting after this allocation will be

A. Ready state
B. Safe state
C. Blocked state
D. Unsafe state

ugcnetcse-june2014-paper2 operating-system resource-allocation

Answer key

## 34.43 Round Robin Scheduling (1) top

### 34.43.1 Round Robin Scheduling: UGC NET CSE | December 2018 | Part 2 | Question: 73 top

Consider the following set of processes and the length of CPU burst time given in milliseconds :

| Process | CPU Burst time (ms) |
|---|---|
| $P_1$ | 5 |
| $P_2$ | 7 |
| $P_3$ | 6 |
| $P_4$ | 4 |

Assume that processes being scheduled with Round-Robin Scheduling Algorithm with time quantum $4$ ms. Then the waiting time for $P_4$ is _____ ms

A. $0$
B. $4$
C. $12$
D. $6$

ugcnetcse-dec2018-paper2 operating-system process-scheduling round-robin-scheduling

Answer key

## 34.44 Runtime Environment (1) top

### 34.44.1 Runtime Environment: UGC NET CSE | December 2009 | Part 2 | Question: 31 top

In an absolute loading scheme which loader function is accomplished by assembler ?

(A) re-allocation

(B) allocation

(C) linking

(D) loading

ugcnetcse-dec2009-paper2 operating-system runtime-environment

Answer key

## 34.45 Scheduling (4) top

### 34.45.1 Scheduling: UGC NET CSE | December 2008 | Part 2 | Question: 23 top

An example of a non pre-emptive scheduling algorithm is :

A. Round Robin
B. Priority Scheduling
C. Shortest job first
D. 2 level scheduling

ugcnetcse-dec2008-paper2 operating-system scheduling

### 34.45.2 Scheduling: UGC NET CSE | December 2010 | Part 2 | Question: 38 top

WINDOWS is a _____ operating.

A. Real time B. Multi-user C. Preemptive D. Non-preemptive

ugcnetcse-dec2010-paper2 operating-system scheduling

Answer key

### 34.45.3 Scheduling: UGC NET CSE | January 2017 | Part 2 | Question: 39 top

Which of the following scheduling algorithms may cause starvation ?

a. First-come-first-served
b. Round Robin
c. Priority

d. Shortest process next

e. Shortest remaining time first

A. a, c and e
B. c, d and e
C. b, d and e
D. b, c and d

ugcnetjan2017ii operating-system scheduling

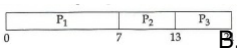
Answer key

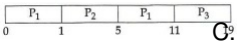
### 34.45.4 Scheduling: UGC NET CSE | July 2018 | Part 2 | Question: 59 top

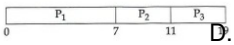
Consider the following three processes with the arrival time and CPU burst time given in miliseconds:

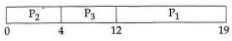
| Process | Arrival Time | Burst Time |
|---|---|---|
| $P_1$ | 0 | 7 |
| $P_2$ | 1 | 4 |
| $P_3$ | 2 | 8 |

The Gantt Chart for preemptive SJF scheduling algorithm is _____

A. 

B. 

C. 

D. 


ugcnetcse-july2018-paper2 operating-system scheduling process-scheduling

Answer key

## 34.46 Seek Latency (1) top

### 34.46.1 Seek Latency: UGC NET CSE | June 2019 | Part 2 | Question: 16 top

For a magnetic disk with concentric circular tracks, the seek latency is not linearly proportional to the seek distance due to

A. non-uniform distribution of requests
B. arm starting or stopping inertia
C. higher capacity of tracks on the periphery of the platter
D. use of uniform arm scheduling policies

ugcnetcse-june2019-paper2 seek-latency

Answer key

## 34.47 Semaphore (3) top

### 34.47.1 Semaphore: UGC NET CSE | December 2009 | Part 2 | Question: 38 top

A semaphore count of negative n means (s = – n) that the queue contains _____ waiting processes.

(A) n + 1

(B) n

(C) n – 1

(D) 0

ugcnetcse-dec2009-paper2 operating-system semaphore

Answer key

### 34.47.2 Semaphore: UGC NET CSE | January 2017 | Part 2 | Question: 36 top

There are three processes $P_1, P_2$ and $P_3$ sharing a semaphore for synchronizing a variable. Initial value of semaphore is one. Assume that negative value of semaphore tells us how many processes are waiting in queue. Processes access the semaphore in following order :

a. $P2$ needs to access

b. $P1$ needs to access

c. $P3$ needs to access

d. $P2$ exits critical section

e. $P1$ exits critical section The final value of semaphore will be :

A. $0$ B. $1$ C. $-1$ D. $-2$

ugcnetjan2017ii operating-system semaphore

Answer key

### 34.47.3 Semaphore: UGC NET CSE | June 2013 | Part 3 | Question: 60 top

Suppose $\mathrm{S}$ and $\mathrm{Q}$ are two semaphores initialized to $1$. $\mathrm{P1}$ and $\mathrm{P2}$ are two processes which are sharing resources.

| **P1 has statements** | **P2 has statements** |
|---|---|
| wait(S); | wait(Q); |
| wait(Q); | wait(S); |
| critical-section 1; | critical-section 2; |
| signal(S); | signal(Q); |
| Signal(Q); | signal(S); |

Their execution may sometimes lead to an undesirable situation called

A. Starvation B. Race condition C. Multithreading D. Deadlock

ugcnetcse-june2013-paper3 operating-system semaphore

Answer key

## 34.48 Shell Script (7) top

### 34.48.1 Shell Script: UGC NET CSE | June 2016 | Part 3 | Question: 68 top

Which of the following statements is not correct with reference to cron daemon in UNIX OS?

A. The cron daemon is the standard tool for running commands on a predetermined-schedule
B. It starts when the system boots and runs as long as the system is up
C. Cron reads configuration files that contain list of command lines and the times at which they invoked
D. Crontab for individual users are not stored

ugcnetcse-june2016-paper3 unix shell-script

Answer key

## 34.48.2 Shell Script: UGC NET CSE | June 2016 | Part 3 | Question: 69 top

In Unix, files can be protected by assigning each one a 9-bit mode called rights bits, now, consider the following two statements:

I. A mode of 641 (octal) means that the owner can read and write the file, other members of the owner's group can read it, and users can execute only
II. A mode of 100 (octal) allows the owner to execute the file , but prohibits all other access

Which of the following statements is correct with reference to above statements?

A. Only I is correct
B. Only II is correct
C. Both I and II are correct
D. Both I and II are incorrect

ugcnetcse-june2016-paper3 unix shell-script

Answer key

## 34.48.3 Shell Script: UGC NET CSE | June 2019 | Part 2 | Question: 50 top

Which of the following UNIX/Linux pipes will count the number of lines in all the files having .c and .h as their extension in the current working directory?

A. cat ∗• ch | wc −1
B. cat ∗•[ c-h ] | wc −1
C. cat ∗•[ ch ] | ls −1
D. cat ∗•[ ch ] | wc −1

ugcnetcse-june2019-paper2 shell-script

Answer key

## 34.48.4 Shell Script: UGC NET CSE | Junet 2015 | Part 2 | Question: 39 top

What does the following command do? grep -vn "abc" x

A. It will print all of the lines in the file x that match the search string "abc"
B. It will print all of the lines in file x that do not match the search string "abc"
C. It will print the total number of lines in the file x that match the search string "abc"
D. It will print the specific line numbers of the file x in which there is a match for string "abc"

ugcnetcse-june2015-paper2 operating-system shell-script non-gate

Answer key

## 34.48.5 Shell Script: UGC NET CSE | Junet 2015 | Part 3 | Question: 75 top

The unix command: $ vi file1 file2

A. Edits file1 and stores the contents of file1 in file2
B. Both files i.e., file1 and file2 can be edited using 'ex' command to travel between the files
C. Both files can be edited using 'mv' command to move between the files
D. Edits file1 first, saves it and then edits file2

ugcnetcse-june2015-paper3 shell-script

Answer key

## 34.48.6 Shell Script: UGC NET CSE | September 2013 | Part 3 | Question: 72 top

Which of the following shell scripts will produce the output “my first script”?

A. for i in my first script { echo –i $i }
B. for my first script; do echo –n; done
C. for i in my first script; do echo –i $i; done
D. for n in my first script; do echo –i $i; done

ugcnetcse-sep2013-paper3 unix shell-script non-gate

Answer key

### 34.48.7 Shell Script: UGC NET CSE | September 2013 | Part 3 | Question: 75 top

Which of the following statements is not true for UNIX Operating System?

A. Major strength of UNIX Operating System is its open standards which enables large number of organizations ranging from academicia to industries to participate in its development
B. UNIX kernel uses modules with well specified interfaces and provides advantages like simplified tesing and maintenance of kernel.
C. UNIX is kernel based operating system with two main components viz. process management subsystem and file management subsystem.
D. All devices are represented as files which simplify the management of I/O devices and files. The directories structure used is directed acyclic graph.

ugcnetcse-sep2013-paper3 unix shell-script

Answer key

## 34.49 Sjf (1) top

### 34.49.1 Sjf: UGC NET CSE | December 2008 | Part 2 | Question: 8 top

Four jobs J1, J2, J3 and J4 are waiting to be run. Their expected run times are 9, 6, 3 and 5 respectively. In order to minimize average response time, the jobs should be run in the order:

(A) J1 J2 J3 J4 (B) J4 J3 J2 J1

(C) J3 J4 J1 J2 (D) J3 J4 J2 J1

ugcnetcse-dec2008-paper2 operating-system sjf scheduling

Answer key

## 34.50 Sstf (1) top

### 34.50.1 Sstf: UGC NET CSE | June 2019 | Part 2 | Question: 41 top

Consider a disk system with $100$ cylinders. The requests to access the cylinders occur in the following sequences:

$$4, 34, 10, 7, 19, 73, 2, 15, 6, 20$$

Assuming that the head is currently at cylinder $50$, what is the time taken to satisfy all requests if it takes $1$ ms to move from the cylinder to adjacent one and the shortest seek time first policy is used?

A. $357$ ms B. $238$ ms C. $276$ ms D. $119$ ms

ugcnetcse-june2019-paper2 disk-scheduling sstf

Answer key

## 34.51 Storage Devices (1) top

### 34.51.1 Storage Devices: UGC NET CSE | December 2014 | Part 3 | Question: 49 top

Various storage devices used by an operating system can be arranged as follows in increasing order of accessing speed :

A. Magnetic tapes $\rightarrow$ magnetic disks $\rightarrow$ optical disks $\rightarrow$ electronic disks $\rightarrow$ main memory $\rightarrow$ cache $\rightarrow$ registers
B. Magnetic tapes $\rightarrow$ magnetic disks $\rightarrow$ electronic disks $\rightarrow$ optical disks $\rightarrow$ main memory $\rightarrow$ cache $\rightarrow$ registers
C. Magnetic tapes $\rightarrow$ electronic disks $\rightarrow$ magnetic disks $\rightarrow$ optical disks $\rightarrow$ main memory $\rightarrow$ cache $\rightarrow$ registers
D. Magnetic tapes $\rightarrow$ optical disks $\rightarrow$ magnetic disks $\rightarrow$ electronic disks $\rightarrow$ main memory $\rightarrow$ cache $\rightarrow$ registers

ugcnetcse-dec2014-paper3 storage-devices accessing-speed

Answer key

## 34.52 System Call (2) top

### 34.52.1 System Call: UGC NET CSE | November 2017 | Part 3 | Question: 75 top

Match the following WINDOWS system calls and UNIX system calls with reference to process control and File manipulation.

| | Windows | | UNIX |
|---|---|---|---|
| $(a)$ | Create – process ( ) | $(i)$ | Open ( ) |
| $(b)$ | WaitForSingleObject ( ) | $(ii)$ | Close ( ) |
| $(c)$ | CreateFile ( ) | $(iii)$ | Fork ( ) |
| $(d)$ | CloseHandle ( ) | $(iv)$ | Wait ( ) |

A. $(a)-(iii)\,(b)-(iv)\,(c)-(i)\,d-(ii)$
B. $(a)-(iv)\,(b)-(iii)\,(c)-(i)\,d-(ii)$
C. $(a)-(iv)\,(b)-(iii)\,(c)-(ii)\,d-(i)$
D. $(a)-(iii)\,(b)-(iv)\,(c)-(ii)\,d-(i)$

ugcnetcse-nov2017-paper3 operating-system system-call

Answer key

### 34.52.2 System Call: UGC NET CSE | October 2020 | Part 2 | Question: 84 top

Assuming that the system call $\text{fork}()$ never fails, consider the following C program $P1$ and $P2$ executed on a UNIX/Linux system:

```
/*P1*/
int main(){
    fork();
    fork();
    fork();
    printf("Happy \n");
}
```

```
/*P2*/
int main(){
    fork();
    printf("Happy \n");
    fork();
    printf("Happy \n");
    fork();
    printf("Happy \n");
}
```

Statement $I$: $P1$ displays "Happy" $8$ times

Statement $II$: $P2$ displays "Happy" $12$ times

In the light of the above statements, choose the correct answer from the options given below

A. Both Statement $I$ and Statement $II$ are true
B. Both Statement $I$ and Statement $II$ are false
C. Statement $I$ is correct but Statement $II$ is false
D. Statement $I$ is incorrect but Statement $II$ is true

ugcnetcse-oct2020-paper2 operating-system system-call

Answer key

## 34.53 System Reliability (1) top

### 34.53.1 System Reliability: UGC NET CSE | August 2016 | Part 3 | Question: 43 top

An Operating System $(OS)$ crashes on the average once in 30 days, that is, the Mean Time Between Failures (MTBF) = 30 days. When this happens, it takes 10 minutes to recover the OS, that is, the Mean Time To Repair (MTTR) = 10 minutes. The availability of the OS with these reliability figures is approximately :

A. 96.97% B. 97.97% C. 99.009% D. 99.97%

ugcnetcse-aug2016-paper3 operating-system system-reliability

Answer key

## 34.54 Threads (4) top

### 34.54.1 Threads: UGC NET CSE | December 2012 | Part 3 | Question: 32 top

A thread is a light weight process.

In the above statement, weight refers to

A. time B. number of resources C. speed D. all of the above

ugcnetcse-dec2012-paper3 operating-system threads

Answer key

### 34.54.2 Threads: UGC NET CSE | December 2013 | Part 3 | Question: 75 top

Possible thread states in Windows 2000 operating system include:

A. Ready, running and waiting
B. Ready, standby, running, waiting, transition and terminated
C. Ready, running, waiting, transition and terminated
D. Standby, running, waiting, transition and terminated

ugcnetcse-dec2013-paper3 operating-system threads non-gate

Answer key

### 34.54.3 Threads: UGC NET CSE | January 2017 | Part 3 | Question: 53 top

One of the disadvantages of user level threads compared to Kernel level thread is

A. If a user level thread of a process executes a system call, all threads in that process are blocked.
B. Scheduling is application dependent.
C. Thread switching doesn't require kernel mode privileges.
D. The library procedures invoked for thread management in user level threads are local procedures.

ugcnetcse-jan2017-paper3 operating-system threads

Answer key

### 34.54.4 Threads: UGC NET CSE | June 2019 | Part 2 | Question: 44 top

Which of the following are NOT shared by the threads of the same process?

a. Stack b. Registers c. Address space d. Message queue

A. a and d B. b and c C. a and b D. a, b and c

ugcnetcse-june2019-paper2 threads

Answer key

## 34.55 Transaction And Concurrency (1) top

### 34.55.1 Transaction And Concurrency: UGC NET CSE | Junet 2015 | Part 2 | Question: 37 top

Let $P-i$ and $P_j$ two processes, R be the set of variables read from memory, and W be the set of variables written to memory. For the concurrent execution of two processes $p_i$ and $P_j$ which of the conditions are not true?

A. $R(P_i) \cap W(P_j) = \Phi$
B. $W(P_i) \cap R(P_j) = \Phi$
C. $R(P_i) \cap R(P_j) = \Phi$
D. $W(P_i) \cap W(P_j) = \Phi$

ugcnetcse-june2015-paper2 transaction-and-concurrency

Answer key

## 34.56 Translation Lookaside Buffer (2) top

### 34.56.1 Translation Lookaside Buffer: UGC NET CSE | December 2013 | Part 2 | Question: 47 top

The virtual address generated by a CPU is 32 bits. The Translation Look-aside Buffer (TLB) can hold total 64 page table entries and a 4-way set associative (i.e. with 4-cache lines in the set). The page size is 4 KB. The minimum size of TLB tag is

A. 12 bits B. 15 bits C. 16 bits D. 20 bits

ugcnetcse-dec2013-paper2 operating-system translation-lookaside-buffer

Answer key

### 34.56.2 Translation Lookaside Buffer: UGC NET CSE | October 2020 | Part 2 | Question: 18 top

Consider a single-level page table system, with the page table stored in the memory. If the hit rate to TLB is $80\%$, and it takes $15$ nanoseconds to search the $TLB$, and $150$ nanoseconds to access the main memory, then what is the effective memory access time, in nanoseconds?

A. $185$ B. $195$ C. $205$ D. $175$

ugcnetcse-oct2020-paper2 operating-system translation-lookaside-buffer

Answer key

## 34.57 Unix (24) top

### 34.57.1 Unix: UGC NET CSE | August 2016 | Part 3 | Question: 49 top

The Unix Operating System Kernel maintains two key data structures related to processes, the process table and the user structure. Now, consider the following two statements :

I. The process table is resident all the time and contain information needed for all processes, even those that are not currently in memory.

II. The user structure is swapped or paged out when its associated process is not in memory, in order not to waste memory on information that is not needed.

Which of the following options is correct with reference to above statements ?

1. Only (I) is correct.
2. Only (II) is correct.
3. Both (I) and (II) are correct.
4. Both (I) and (II) are wrong.

ugcnetcse-aug2016-paper3 operating-system unix

Answer key

### 34.57.2 Unix: UGC NET CSE | December 2009 | Part 2 | Question: 40 top

The Unix command used to find out the number of characters in a file is

(A) nc

(B) wc

(C) chcnt

(D) lc

ugcnetcse-dec2009-paper2 unix operating-system

Answer key

## 34.57.3 Unix: UGC NET CSE | December 2012 | Part 2 | Question: 36 top

In UNIX, which of the following command is used to set the task priority?

A. init B. nice C. kill D. PS

ugcnetcse-dec2012-paper2 unix operating-system

Answer key

## 34.57.4 Unix: UGC NET CSE | December 2012 | Part 3 | Question: 37 top

Everything below the system call interface and above the physical hardware is known as

A. Kernel B. Bus C. Shell D. Stub

ugcnetcse-dec2012-paper3 unix operating-system non-gate

Answer key

## 34.57.5 Unix: UGC NET CSE | December 2013 | Part 2 | Question: 50 top

Linux operating system uses

A. Affinity scheduling
B. Fair Preemptive Scheduling
C. Hand Shaking
D. Highest Penalty Ratio Next

ugcnetcse-dec2013-paper2 operating-system unix

Answer key

## 34.57.6 Unix: UGC NET CSE | December 2013 | Part 3 | Question: 67 top

In Unix, how do you check that two given strings a and b are equal?

A. test $a -eq $b
B. test $a -equal $b
C. test $a = $b
D. Sh-C test $a == $b

ugcnetcse-dec2013-paper3 operating-system unix non-gate

Answer key

## 34.57.7 Unix: UGC NET CSE | December 2013 | Part 3 | Question: 73 top

Which statement is not true about process O in the Unix operating system ?

A. Process O is called init process.
B. Process O is not created by fork system call.
C. After forking process 1, process O becomes swapper process.
D. Process O is a special process created when system boots

ugcnetcse-dec2013-paper3 operating-system unix

Answer key

## 34.57.8 Unix: UGC NET CSE | December 2013 | Part 3 | Question: 74 top

Which of the following commands would return process_id of sleep command?

A. Sleep 1 and echo $?
B. Sleep 1 and echo $#
C. Sleep 1 and echo $×
D. Sleep 1 and echo $!

ugcnetcse-dec2013-paper3 operating-system non-gate unix

Answer key

## 34.57.9 Unix: UGC NET CSE | December 2015 | Part 2 | Question: 30 top

In Unix, the login prompt can be changed by changing the contents of the file_____

A. contrab B. init C. gettydefs D. inittab

ugcnetcse-dec2015-paper2 operating-system unix

Answer key

## 34.57.10 Unix: UGC NET CSE | December 2015 | Part 3 | Question: 56 top

In Unix, the command to enable execution permission for file "mylife" by all is_____

A. Chmod ugo + X mylife
B. Chmod a + X mylife
C. Chmod + X mylife
D. All of the above

ugcnetcse-dec2015-paper3 unix operating-system non-gate

Answer key

## 34.57.11 Unix: UGC NET CSE | December 2015 | Part 3 | Question: 57 top

What will be the output of the following Unix command? $rm chap0\[1-3\]

A. Remove file chap0[1-3]
B. Remove file chap01, chap02, chap03
C. Remove file chap \[1-3\]
D. None of the above

ugcnetcse-dec2015-paper3 unix operating-system non-gate

Answer key

## 34.57.12 Unix: UGC NET CSE | January 2017 | Part 3 | Question: 51 top

Match the following for Unix file system :

| | List-I | | List-II |
|---|---|---|---|
| a. | Boot block | i. | Information about file system, free block list, free inode list etc. |
| b. | Super block | ii. | Contains operating system files as well as program and data files created by users. |
| c. | Inode block | iii. | Contains boot program and partition table. |
| d. | Data block | iv. | Contains a table for every file in the file system. Attributes of files are stored here. |

**Codes :**

A. a-iii, b-i, c-ii, d-iv
B. a-iii, b-i, c-iv, d-ii
C. a-iv, b-iii, c-ii, d-i
D. a-iv, b-iii, c-i, d-ii

ugcnetcse-jan2017-paper3 operating-system unix

Answer key

## 34.57.13 Unix: UGC NET CSE | January 2017 | Part 3 | Question: 54 top

Which statements is not correct about “init” process in Unix?

A. It is generally the parent of the login shell.
B. It has PID 1.
C. It is the first process in the system.
D. Init forks and execs a ‘getty’ process at every port connected to a terminal.

ugcnetcse-jan2017-paper3 operating-system unix

Answer key

## 34.57.14 Unix: UGC NET CSE | June 2013 | Part 2 | Question: 50 top

The $mv$ command changes

A. the inode
B. the inode-number
C. the directory entry
D. both the directory entry and the inode

ugcnetcse-june2013-paper2 unix

Answer key

## 34.57.15 Unix: UGC NET CSE | June 2014 | Part 3 | Question: 37 top

_____ maintains the list of free disk blocks in the Unix file system.

A. I-node
B. Boot block
C. Super block
D. File allocation table

ugcnetjune2014iii operating-system unix

Answer key

## 34.57.16 Unix: UGC NET CSE | June 2014 | Part 3 | Question: 46 top

The output generated by the LINUX command :

$ seq 1 2 10

will be

A. 1 2 10
B. 1 2 3 4 5 6 7 8 9 10
C. 1 3 5 7 9
D. 1 5 10

ugcnetjune2014iii operating-system unix

Answer key

## 34.57.17 Unix: UGC NET CSE | June 2016 | Part 3 | Question: 49 top

In UNIX , processes that have finished execution but have not yet had their status collected are known as _____

A. Sleeping processes
B. Stopped Processes
C. Zombie Process
D. Orphan Processes

ugcnetcse-june2016-paper3 operating-system unix

Answer key

## 34.57.18 Unix: UGC NET CSE | June 2016 | Part 3 | Question: 50 top

In UNIX OS , when a process creates a new process using the fork() system call , which of the following state is shared between the parent process and child process

A. Heap
B. Stack
C. Shared memory segments
D. Both heap and Stack

ugcnetcse-june2016-paper3 operating-system unix

Answer key

## 34.57.19 Unix: UGC NET CSE | June 2016 | Part 3 | Question: 51 top

Which of the following information about the UNIX file system is not correct?

A. Super block contains the number of i-nodes, the number of disk blocks, and the start of the list of free disk blocks
B. An i-node contains accounting information as well as enough information to locate all the disk blocks that holds the file's data
C. Each i-node is 256-bytes long
D. All the files and directories are stored in data blocks

ugcnetcse-june2016-paper3 operating-system unix

Answer key

## 34.57.20 Unix: UGC NET CSE | Junet 2015 | Part 2 | Question: 40 top

The Unix Kernel maintains two key data structures related to processes, the process table and the user structure. Which of following information is not the part of user structure?

A. File descriptor table
B. System call state
C. Scheduling parameters
D. Kernel stack

ugcnetcse-june2015-paper2 unix

Answer key

## 34.57.21 Unix: UGC NET CSE | Junet 2015 | Part 3 | Question: 54 top

A unix file may be of the type

A. Regular file
B. Directory file
C. Device file
D. Any one of the above

ugcnetcse-june2015-paper3 operating-system unix

Answer key

## 34.57.22 Unix: UGC NET CSE | Junet 2015 | Part 3 | Question: 73 top

Match the following for UNIX system calls :

| | List-I | | List-II |
|---|---|---|---|
| (a) | exec | (i) | Creates new process |
| (b) | brk | (ii) | Invokes another program overlaying memory space with a copy of an executable file. |
| (c) | wait | (iii) | To increase or decrease the size of data region |
| (d) | fork | (iv) | A process synchronizes with termination of child process |

**Codes :**

A. (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)
B. (a)-(iii), (b)-(ii), (c)-(iv), (d)-(i)
C. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)
D. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)

ugcnetcse-june2015-paper3 operating-system unix

Answer key

## 34.57.23 Unix: UGC NET CSE | September 2013 | Part 2 | Question: 47 top

Assume that an implementation of Unix operating system uses i-nodes to keep track of data blocks allocated to a file. It supports 12 direct block addresses, one in direct block address and one double indirect block address. The file system has 256 bytes block size and 2 bytes for disk block address. The maximum possible size of a file in this system is

A. 16 MB
B. 16 KB
C. 70 KB
D. 71 KB

ugcnetsep2013ii operating-system unix

Answer key

## 34.57.24 Unix: UGC NET CSE | September 2013 | Part 3 | Question: 74 top

Match the following for Windows Operating System :

| | | | |
|---|---|---|---|
| (a) | Hardware abstration Layer | (i) | Starting all processes, emulation of different operating system,security functions, transform character based applications to graphical representation |
| (b) | Kernel | (ii) | Export a virtual memory interface, support for symmetric multiprocessing, administration, details of mapping memory, configuring I/O buses, setting up DMA |
| (c) | Executive | (iii) | Thread scheduling, interrupt and exception handling,recovery after power failure |
| (d) | Win32 subsystem | (iv) | Objet manager, virtual memory manager, process manager, plug-and-Play and power manager |

**Codes :**

A. (a)-(i), (b)-(iii), (c)-(ii), (d)-(iv)
B. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)
C. (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)
D. (a)-(iii), (b)-(ii), (c)-(i), (d)-(iv)

ugcnetcse-sep2013-paper3 operating-system unix

Answer key

## 34.58 Virtual Memory (5) top

### 34.58.1 Virtual Memory: UGC NET CSE | December 2008 | Part 2 | Question: 42 top

If the executing program size is greater than the existing $RAM$ of a computer, it is still possible to execute the program if the $OS$ supports :

A. multitasking
B. virtual memory
C. paging system
D. none of the above

ugcnetcse-dec2008-paper2 operating-system virtual-memory

Answer key

### 34.58.2 Virtual Memory: UGC NET CSE | December 2013 | Part 3 | Question: 70 top

Translation Look-aside Buffer (TLB) is

A. a cache-memory in which item to be searched is compared one-by-one with the keys
B. a cache-memory in which item to be searched is compared with all the keys simultaneously
C. An associative memory in which item to be searched is compared one-by-one with the keys
D. An associative memory in which item to be searched is compared with all the keys simultaneously

ugcnetcse-dec2013-paper3 operating-system cache-memory virtual-memory

Answer key

### 34.58.3 Virtual Memory: UGC NET CSE | December 2015 | Part 2 | Question: 26 top

A virtual memory has a page size of 1K words. There are eight pages and four blocks. The associative memory page table contains the following entries :

| Page | Block |
|---|---|
| 0 | 3 |
| 2 | 1 |
| 5 | 2 |
| 7 | 0 |

Which of the following list of virtual addresses (in decimal) will not cause any page fault if referenced by the CPU?

A. $1024, 3072, 4096, 6144$
B. $1234, 4012, 5000, 6200$
C. $1020, 3012, 6120, 8100$
D. $2021, 4050, 5112, 7100$

ugcnetcse-dec2015-paper2 operating-system virtual-memory

Answer key

### 34.58.4 Virtual Memory: UGC NET CSE | January 2017 | Part 3 | Question: 2 top

Which of the following is incorrect for virtual memory?

A. Large programs can be written
B. More I/O is required
C. More addressable memory available
D. Faster and easy swapping of process

ugcnetcse-jan2017-paper3 operating-system virtual-memory

Answer key

### 34.58.5 Virtual Memory: UGC NET CSE | June 2014 | Part 2 | Question: 31 top

In a paged memory management algorithm, the hit ratio is $70\%$. If it takes $30$ nanoseconds to search Translation Look-aside Buffer (TLB) and $100$ nanoseconds (ns) to access memory, the effective memory access time is

A. $91$ ns
B. $69$ ns
C. $200$ ns
D. $160$ ns

ugcnetcse-june2014-paper2 operating-system virtual-memory

Answer key

## 34.59 Vsam (1) top

### 34.59.1 Vsam: UGC NET CSE | December 2010 | Part 2 | Question: 36 top

The dynamic allocation of storage areas with VSAM files is accomplished by

A. Hashing
B. Control splits
C. Overflow areas
D. Relative recoding

ugcnetcse-dec2010-paper2 operating-system vsam

Answer key

## 34.60 Windows (5) top

### 34.60.1 Windows: UGC NET CSE | December 2013 | Part 3 | Question: 68 top

In windows 2000 operating system all the processor-dependent code is isolated in a dynamic link library called

A. NTFS file system
B. Hardware abstraction layer
C. Microkernel
D. Process Manger

ugcnetcse-dec2013-paper3 operating-system windows non-gate

Answer key

### 34.60.2 Windows: UGC NET CSE | December 2014 | Part 3 | Question: 73 top

Which of the following versions of Windows O.S. contain built-in partition manager which allows us to shrink and expand pre-defined drives ?

A. Windows Vista
B. Windows $2000$
C. Windows NT
D. Windows $98$

ugcnetcse-dec2014-paper3 operating-system windows non-gate

Answer key

### 34.60.3 Windows: UGC NET CSE | December 2015 | Part 3 | Question: 55 top

The character set used in Windows $2000$ operating system is

A. $8$ bit ASCII
B. Extended ASCII
C. $16$ bit UNICODE
D. $12$ bit UNICODE

ugcnetcse-dec2015-paper3 windows operating-system non-gate

Answer key

### 34.60.4 Windows: UGC NET CSE | June 2013 | Part 3 | Question: 66 top

The versions of windows operating system like Windows XP and Window Vista uses following file system:

A. FAT-16
B. FAT-32
C. NTFS (NT File System)
D. All of the above

ugcnetcse-june2013-paper3 operating-system windows

Answer key

### 34.60.5 Windows: UGC NET CSE | September 2013 | Part 3 | Question: 73 top

The portion of Windows 2000 operating system which is not portable is

A. processor management
B. user interface
C. device management
D. virtual memory management

ugcnetcse-sep2013-paper3 operating-system windows

Answer key

## Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 34.0.1 | Q-Q | 34.0.2 | Q-Q | 34.0.3 | Q-Q | 34.0.4 | C | 34.0.5 | B |
| 34.0.6 | Q-Q | 34.0.7 | Q-Q | 34.0.8 | Q-Q | 34.0.9 | Q-Q | 34.0.10 | Q-Q |
| 34.0.11 | C | 34.0.12 | Q-Q | 34.0.13 | Q-Q | 34.0.14 | Q-Q | 34.0.15 | Q-Q |
| 34.0.16 | Q-Q | 34.0.17 | Q-Q | 34.0.18 | Q-Q | 34.0.19 | Q-Q | 34.0.20 | C |
| 34.0.21 | X | 34.0.22 | A | 34.0.23 | A | 34.0.24 | D | 34.0.25 | D |
| 34.0.26 | X | 34.0.27 | B | 34.0.28 | Q-Q | 34.0.29 | B | 34.0.30 | A |
| 34.0.31 | Q-Q | 34.0.32 | Q-Q | 34.0.33 | C | 34.0.34 | A | 34.0.35 | A |
| 34.1.1 | C | 34.2.1 | A | 34.3.1 | B | 34.4.1 | C | 34.5.1 | C |
| 34.6.1 | Q-Q | 34.6.2 | Q-Q | 34.6.3 | B | 34.6.4 | Q-Q | 34.6.5 | Q-Q |
| 34.6.6 | D | 34.6.7 | A | 34.6.8 | Q-Q | 34.6.9 | A | 34.7.1 | D |
| 34.8.1 | B | 34.9.1 | C | 34.10.1 | A | 34.11.1 | A | 34.11.2 | B |
| 34.11.3 | C | 34.11.4 | C | 34.11.5 | B | 34.11.6 | C | 34.11.7 | B |
| 34.11.8 | A | 34.11.9 | A | 34.11.10 | D | 34.12.1 | B | 34.13.1 | C |
| 34.13.2 | X | 34.13.3 | D | 34.13.4 | B | 34.13.5 | B | 34.13.6 | C |
| 34.13.7 | D | 34.13.8 | C | 34.13.9 | B | 34.14.1 | B | 34.15.1 | Q-Q |
| 34.16.1 | B | 34.17.1 | Q-Q | 34.18.1 | Q-Q | 34.18.2 | C | 34.18.3 | X |
| 34.18.4 | B | 34.18.5 | B | 34.18.6 | A | 34.18.7 | B | 34.19.1 | Q-Q |
| 34.20.1 | Q-Q | 34.21.1 | B | 34.22.1 | A | 34.22.2 | C | 34.23.1 | Q-Q |
| 34.23.2 | C | 34.24.1 | Q-Q | 34.25.1 | A | 34.26.1 | Q-Q | 34.26.2 | A |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 34.27.1 | Q-Q | 34.28.1 | Q-Q | 34.28.2 | Q-Q | 34.28.3 | Q-Q | 34.28.4 | X |
| 34.28.5 | A | 34.28.6 | B | 34.28.7 | C | 34.28.8 | C | 34.29.1 | A |
| 34.30.1 | A | 34.31.1 | D | 34.32.1 | C | 34.33.1 | Q-Q | 34.33.2 | Q-Q |
| 34.33.3 | C | 34.33.4 | Q-Q | 34.33.5 | Q-Q | 34.33.6 | D | 34.33.7 | A |
| 34.34.1 | C | 34.34.2 | B | 34.34.3 | B | 34.34.4 | D | 34.34.5 | D |
| 34.35.1 | B | 34.35.2 | Q-Q | 34.35.3 | C | 34.35.4 | B | 34.35.5 | Q-Q |
| 34.35.6 | Q-Q | 34.35.7 | C | 34.35.8 | C | 34.36.1 | A | 34.37.1 | B |
| 34.37.2 | B | 34.38.1 | Q-Q | 34.38.2 | Q-Q | 34.39.1 | Q-Q | 34.39.2 | Q-Q |
| 34.39.3 | Q-Q | 34.39.4 | B | 34.39.5 | B | 34.39.6 | D | 34.39.7 | C |
| 34.39.8 | Q-Q | 34.39.9 | Q-Q | 34.39.10 | A | 34.39.11 | D | 34.39.12 | B |
| 34.39.13 | D | 34.39.14 | B | 34.39.15 | B | 34.39.16 | B | 34.39.17 | B |
| 34.39.18 | C | 34.39.19 | A | 34.39.20 | A | 34.40.1 | Q-Q | 34.40.2 | Q-Q |
| 34.41.1 | Q-Q | 34.42.1 | A | 34.42.2 | B | 34.43.1 | Q-Q | 34.44.1 | Q-Q |
| 34.45.1 | Q-Q | 34.45.2 | Q-Q | 34.45.3 | B | 34.45.4 | Q-Q | 34.46.1 | B |
| 34.47.1 | Q-Q | 34.47.2 | A | 34.47.3 | D | 34.48.1 | D | 34.48.2 | C |
| 34.48.3 | D | 34.48.4 | B | 34.48.5 | B | 34.48.6 | C | 34.48.7 | B |
| 34.49.1 | Q-Q | 34.50.1 | D | 34.51.1 | D | 34.52.1 | A | 34.52.2 | C |
| 34.53.1 | D | 34.54.1 | B | 34.54.2 | B | 34.54.3 | A | 34.54.4 | C |
| 34.55.1 | C | 34.56.1 | C | 34.56.2 | B | 34.57.1 | 3 | 34.57.2 | Q-Q |
| 34.57.3 | B | 34.57.4 | A | 34.57.5 | B | 34.57.6 | C | 34.57.7 | A |
| 34.57.8 | D | 34.57.9 | C | 34.57.10 | B | 34.57.11 | B | 34.57.12 | B |
| 34.57.13 | C | 34.57.14 | C | 34.57.15 | C | 34.57.16 | C | 34.57.17 | C |
| 34.57.18 | C | 34.57.19 | C | 34.57.20 | C | 34.57.21 | D | 34.57.22 | A |
| 34.57.23 | X | 34.57.24 | C | 34.58.1 | Q-Q | 34.58.2 | D | 34.58.3 | C |
| 34.58.4 | B | 34.58.5 | D | 34.59.1 | Q-Q | 34.60.1 | B | 34.60.2 | A |
| 34.60.3 | C | 34.60.4 | D | 34.60.5 | D | | | | |

### 35.0.1 UGC NET CSE | October 2022 | Part 1 | Question: 1 top

For multiprocessor system, interconnection network - cross bar switch is an example of

A. Non blocking network
B. Blocking network
C. That varies from connection to connection
D. Recurrent network

ugcnetcse-oct2022-paper1

### 35.0.2 UGC NET CSE | June 2011 | Part 2 | Question: 33 top

Which of the following permanent database that has an entry for each terminal symbol ?

A. Literal table
B. Identifier table
C. Terminal table
D. Source table

ugcnetcse-june2011-paper2 databases

Answer key

### 35.0.3 UGC NET CSE | June 2011 | Part 2 | Question: 2 top

The circumference of the two concentric disks are divided into $100$ sections each. For the outer disk, $100$ of the sections are painted red and $100$ of the sections are painted blue. For the inner disk, the sections are painted red and blue in an arbitrary manner. It is possible to align the two disks so that

A. $100$ or more
B. $125$ or more
C. $150$ or more
D. $175$ or more

of the sections on the inner disks have their colours matched with the corresponding section on outer disk.

ugcnetcse-june2011-paper2

Answer key

### 35.0.4 UGC NET CSE | June 2011 | Part 2 | Question: 17 top

Which of the following is the process by which a user's privileges ascertained ?

A. Authorization
B. Authentication
C. Access Control
D. None of these

ugcnetcse-june2011-paper2 databases

Answer key

### 35.0.5 UGC NET CSE | June 2011 | Part 2 | Question: 12 top

What features make $C++$ so powerful ?

A. Easy implementation
B. Reusing old code
C. Easy memory management
D. All of the above

ugcnetcse-june2011-paper2

Answer key

### 35.0.6 UGC NET CSE | June 2011 | Part 2 | Question: 10 top

$8$-bit $1's$ complement form of $-77.25$ is

A. 01001101.0100
B. 01001101.0010
C. 10110010.1011
D. 10110010.1101

ugcnetcse-june2011-paper2

Answer key

### 35.0.7 UGC NET CSE | June 2011 | Part 2 | Question: 9 top

A multiplexer is a logic circuit that

A. Accepts one input and gives several output
B. Accepts many inputs and gives many output

C. Accepts many inputs and gives one output

D. Accepts one input and gives one output

ugcnetcse-june2011-paper2

Answer key

### 35.0.8 UGC NET CSE | June 2011 | Part 2 | Question: 8 top

A latch is constructed using two cross-coupled

A. AND and OR gates

B. AND gates

C. NAND and NOR gates

D. NAND gates

ugcnetcse-june2011-paper2

Answer key

### 35.0.9 UGC NET CSE | June 2011 | Part 2 | Question: 7 top

$(A+B)\bar{A}B$ is equivalent to

A. $A \bigoplus B$

B. $A \bigodot B$

C. $(A \bigoplus B) \bigodot A$

D. $(A \bigodot B) \bigoplus A$

ugcnetcse-june2011-paper2

Answer key

### 35.0.10 UGC NET CSE | June 2011 | Part 2 | Question: 6 top

The hexadecimal number equivalent to $(1762.46)_8$ is

A. $3F2.89$

B. $3F2.98$

C. $2F3.89$

D. $2F3.98$

ugcnetcse-june2011-paper2

Answer key

### 35.0.11 UGC NET CSE | June 2011 | Part 2 | Question: 5 top

The number of 1's present in the binary representation of $10 \times 256 + 5 \times 16 + 5$ is

A. $5$

B. $6$

C. $7$

D. $8$

ugcnetcse-june2011-paper2

Answer key

### 35.0.12 UGC NET CSE | June 2011 | Part 2 | Question: 11 top

From the point of view of the programmer, what are the major advantages of using a high-level language rather than internal machine code or assembly language?

A. Program portability

B. Easy development

C. Efficiency

D. None of the above

ugcnetcse-june2011-paper2

Answer key

### 35.0.13 UGC NET CSE | June 2011 | Part 2 | Question: 29 top

A smart modem can dial, hangup and answer incoming calls automatically. Can you tell who provides the appropriate instructions to the modem for this purpose ?

A. Communication software

B. Error detection protocols

C. Link access procedure (LAP)

D. Telecommunications

ugcnetcse-june2011-paper2 computer-networks

Answer key

### 35.0.14 UGC NET CSE | August 2016 | Part 2 | Question: 17 top

Relational database schema normalization is NOT for :

A. Reducing the number of joins required to satisfy a query.

B. Eliminating uncontrolled redundancy of data stored in the database.
C. Eliminating number of anomalies that could otherwise occur with inserts and deletes.
D. Ensuring that functional dependencies are enforced.

ugcnetcse-aug2016-paper2

Answer key

### 35.0.15 UGC NET CSE | June 2011 | Part 2 | Question: 28 top

Consider the following statement :

(i) The bandwidth of the A.M., wave depends on the band width of the modulating signal.

(ii) The bandwidth of the A.M., wave depends on the modulation index.

(iii) The bandwidth of the F.M, wave for all practical purpose depends on the amplitude of the carrier.

Of these statements the correct statements are

A. (i, ii) B. (i, iii) C. (ii, iii) D. All of the above

ugcnetcse-june2011-paper2 computer-networks

Answer key

### 35.0.16 UGC NET CSE | June 2007 | Part 2 | Question: 33 top

In an absolute loading scheme, which loader function is accomplished by programmer?

A. Allocation B. Linking C. Rellocation D. Both $A$ and $B$

ugcnetcse-june2007-paper2

### 35.0.17 UGC NET CSE | June 2006 | Part 2 | Question: 30 top

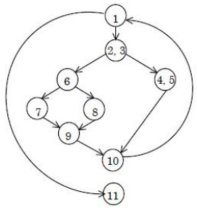
The program used to determine the round – trip delay between a workstation and a destination adress is :

A. Tracert B. Traceroute C. Ping D. Pop

ugcnetcse-june2006-paper2

### 35.0.18 UGC NET CSE | December 2019 | Part 2 | Question: 94 top

A flow graph $F$ with entry node $(1)$ and exit node $(11)$ is shown below:




Flowgraph F

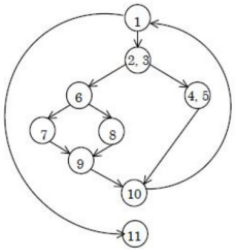
How many nodes are there in the longest independent path?

A. $6$ B. $7$ C. $8$ D. $9$

ugcnetcse-dec2019-paper2

### 35.0.19 UGC NET CSE | December 2019 | Part 2 | Question: 95 top

A flow graph $F$ with entry node $(1)$ and exit node $(11)$ is shown below:



Flowgraph F

How many predicate nodes are there and what are their names?

A. Three: $(1,(2,3),6)$
B. Three: $(1,4,6)$
C. Four: $((2,3),6,10,11)$
D. Four: $((2,3),6,9,10)$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.20 UGC NET CSE | December 2019 | Part 2 | Question: 96 top

An organization needs to maintain database having five attributes $\mathbf{A, B, C, D, E}$. These attributes are functionally dependent on each other for which functionality dependency set $F$ is given as: $\mathbf{F : \{A \rightarrow BC, D \rightarrow E, BC \rightarrow D, A \rightarrow D\}}$. Consider a universal relation $\mathbf{R(A, B, C, D, E)}$ with functional dependency set $\mathbf{F}$. Also all attributes are simple and take atomic values only.

MInimal cover $\mathbf{F'}$ of functional dependency set $\mathbf{F}$ is

A. $\mathbf{F' = \{A \rightarrow B, A \rightarrow C, BC \rightarrow D, D \rightarrow E\}}$
B. $\mathbf{F' = \{A \rightarrow BC, B \rightarrow D, D \rightarrow E\}}$
C. $\mathbf{F' = \{A \rightarrow B, A \rightarrow C, A \rightarrow D, D \rightarrow E\}}$
D. $\mathbf{F' = \{A \rightarrow B, A \rightarrow C, B \rightarrow D, C \rightarrow D, D \rightarrow E\}}$

ugcnetcse-dec2019-paper2

## 35.0.21 UGC NET CSE | December 2019 | Part 2 | Question: 97 top

An organization needs to maintain database having five attributes $\mathbf{A, B, C, D, E}$. These attributes are functionally dependent on each other for which functionality dependency set $F$ is given as: $\mathbf{F : \{A \rightarrow BC, D \rightarrow E, BC \rightarrow D, A \rightarrow D\}}$. Consider a universal relation $\mathbf{R(A, B, C, D, E)}$ with functional dependency set $\mathbf{F}$. Also all attributes are simple and take atomic values only.

Identify primary key of table $R$ with functional dependency set $F$

A. $\mathbf{BC}$
B. $\mathbf{AD}$
C. $\mathbf{A}$
D. $\mathbf{AB}$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.22 UGC NET CSE | December 2019 | Part 2 | Question: 98 top

An organization needs to maintain database having five attributes $\mathbf{A, B, C, D, E}$. These attributes are functionally dependent on each other for which functionality dependency set $F$ is given as: $\mathbf{F : \{A \rightarrow BC, D \rightarrow E, BC \rightarrow D, A \rightarrow D\}}$. Consider a universal relation $\mathbf{R(A, B, C, D, E)}$ with functional dependency set $\mathbf{F}$. Also all attributes are simple and take atomic values only.

Identify the normal form in which relation $R$ belong to

A. $1\,\mathrm{NF}$
B. $2\,\mathrm{NF}$
C. $3\,\mathrm{NF}$
D. $\mathrm{BCNF}$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.23 UGC NET CSE | December 2019 | Part 2 | Question: 99 top

An organization needs to maintain database having five attributes $\mathbf{A, B, C, D, E}$. These attributes are functionally dependent on each other for which functionality dependency set $F$ is given as: $\mathbf{F : \{A \rightarrow BC, D \rightarrow E, BC \rightarrow D, A \rightarrow D\}}$. Consider a universal relation $\mathbf{R(A, B, C, D, E)}$ with functional dependency set $\mathbf{F}$. Also all attributes are simple and take atomic values only.

Identify the redundant functional dependency in $F$

A. $\mathbf{BC \rightarrow D}$
B. $\mathbf{D \rightarrow E}$
C. $\mathbf{A \rightarrow D}$
D. $\mathbf{A \rightarrow BC}$

ugcnetcse-dec2019-paper2

## 35.0.24 UGC NET CSE | December 2019 | Part 2 | Question: 100 top

An organization needs to maintain database having five attributes $\mathbf{A, B, C, D, E}$. These attributes are functionally dependent on each other for which functionality dependency set $F$ is given as: $\mathbf{F : \{A \rightarrow BC, D \rightarrow E, BC \rightarrow D, A \rightarrow D\}}$. Consider a universal relation $\mathbf{R(A, B, C, D, E)}$ with functional dependency set $\mathbf{F}$. Also all attributes are simple and take atomic values only.

Assume that given table $\mathbf{R}$ is decomposed in two tables

$\mathbf{R}_1(\mathbf{A, B, C})$ with functional dependency set $f_1 = \{\mathbf{A \rightarrow B, A \rightarrow C}\}$ and

$\mathbf{R}_2(\mathbf{A, D, E})$ with $\mathbf{FD}$ set $\mathbf{F}_2 = \{\mathbf{A \rightarrow D, D \rightarrow E}\}$

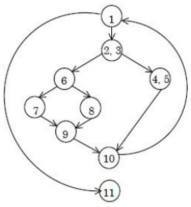
Which of the following option is true w.r.t. given decomposition?

A. Dependency preservation property is followed
B. $R_1$ and $R_2$ are both in $2\,NF$
C. $R_2$ is in $2\,NF$ and $R_3$ is in $3\,NF$
D. $R_1$ is in $3\,NF$ and $R_2$ is in $2\,NF$

ugcnetcse-dec2019-paper2

## 35.0.25 UGC NET CSE | December 2019 | Part 2 | Question: 93 top

A flow graph $F$ with entry node $(1)$ and exit node $(11)$ is shown below:



Flowgraph F

How many regions are there in flowgraph $F$?

A. $2$
B. $3$
C. $4$
D. $5$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.26 UGC NET CSE | August 2016 | Part 3 | Question: 7 top

Which of the following statements is/are True regarding some advantages that an objectoriented DBMS (OODBMS) offers over a relational database ?

I. An OODBMS avoids the “impedance mismatch” problem.

II. An OODBMS avoids the “phantom” problem.

III. An OODBMS provides higher performance concurrency control than most relational databases.

IV. An OODBMS provides faster access to individual data objects once they have been read from disk.

A. $II$ and $III$ only
B. $I$ and $IV$ only
C. $I, II,$ and $III$ only
D. $I, III$ and $IV$ only

ugcnetcse-aug2016-paper3 databases

Answer key

## 35.0.27 UGC NET CSE | June 2011 | Part 2 | Question: 3 top

The proposition $\sim p \vee q$ is equivalent to

A. $p \rightarrow q$
B. $q \rightarrow p$
C. $p \leftrightarrow q$
D. $p \vee q$

ugcnetcse-june2011-paper2

Answer key

## 35.0.28 UGC NET CSE | December 2019 | Part 1 | Question: 3 top

Which of the following are classroom related factors that influence effectiveness of teaching?

a. Prior task related behavior of students
b. Adherence to linear pattern of communication by the teacher
c. Socio-economic status of the family to which learners belong
d. Inappropriate use of technological resources by the teacher
e. Cultural background of students

Choose your answer from the following options:

A. (a), (b) and (c)
B. (b), (c) and (d)
C. (a), (b) and (d)
D. (c) , (d) and (e)

ugcnetcse-dec2019-paper1

## 35.0.29 UGC NET CSE | June 2013 | Part 2 | Question: 36 top

A test contains 100 true/false questions. How many different ways can a student answer the question on the test, if the answer may be left blank also.

A. ${}^{100}P_2$
B. ${}^{100}C_2$
C. $2^{100}$
D. $3^{100}$

ugcnetcse-june2013-paper2

Answer key

## 35.0.30 UGC NET CSE | June 2013 | Part 2 | Question: 6 top

When the following code is executed what will be the value of x and y?

```
int x=1, y=0;
y=x++;
```

A. 2, 1
B. 2, 2
C. 1, 1
D. 1, 2

ugcnetcse-june2013-paper2

Answer key

## 35.0.31 UGC NET CSE | June 2013 | Part 2 | Question: 4 top

A good software design must have

A. High module coupling, High module cohesion
B. High module coupling, Low module cohesion
C. Low module coupling, High module cohesion
D. Low module coupling, Low module cohesion

ugcnetcse-june2013-paper2

Answer key

## 35.0.32 UGC NET CSE | June 2013 | Part 2 | Question: 2 top

Match the following **:**

| | | | |
|---|---|---|---|
| a. | Good Quality | i. | Program does not fail for a specified time in a given environment |
| b. | Correctness | ii. | Meets the functional Requirement |
| c. | Predictable | iii. | Meets Both functional and non-functional requirements |
| d. | Reliable | iv. | Process is under statistical control |

**Codes :**

A. a-iii; b-ii; c-iv; d-i
B. a-ii; b-iii; c-iv; d-i
C. a-i; b-ii; c-iv; d-iii
D. a-i; b-ii; c-iii; d-iv

ugcnetcse-june2013-paper2

Answer key

## 35.0.33 UGC NET CSE | June 2013 | Part 2 | Question: 10 top

Which of the following is not a type of Database Management System?

A. Hierarchical
B. Network
C. Relational
D. Sequential

ugcnetcse-june2013-paper2

Answer key

## 35.0.34 UGC NET CSE | June 2013 | Part 2 | Question: 1 top

COCOMO stands for

A. COmposite COst MOdel
B. COnstructive COst MOdel
C. COnstructive COmposite MOdel
D. COmprehensive COnstruction MOdel

ugcnetcse-june2013-paper2

Answer key

## 35.0.35 UGC NET CSE | June 2012 | Part 3 | Question: 47 top

The colour of an object is largely determined by its diffuse reflection coefficient. If $K_d = (0.8, 0.4, 0)$, then what shall be the colour of the object, of the light used is blue and magenta?

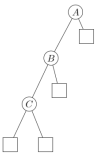
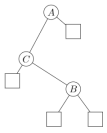
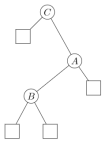
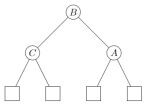
A. White and Red
B. Red and Blue
C. Black and White
D. Black and Red

ugcnetcse-june2012-paper3

Answer key

## 35.0.36 UGC NET CSE | June 2012 | Part 3 | Question: 42 top

Which of the following binary tree is optimal, if probabilities of successful search and unsuccessful search are same?

A. 
B. 
C. 
D. 

ugcnetcse-june2012-paper3

Answer key

## 35.0.37 UGC NET CSE | June 2013 | Part 2 | Question: 46 top

A virtual memory based memory management algorithm partially swaps out a process. This is an example of

A. short term scheduling
B. long term scheduling
C. medium term scheduling
D. mutual exclusion

ugcnetcse-june2013-paper2

Answer key

## 35.0.38 UGC NET CSE | June 2013 | Part 2 | Question: 11 top

Manager's salary details are to be hidden from Employee table. This Technique is called as

A. Conceptual level Datahiding
B. Physical level Datahiding
C. External level Datahiding
D. Logical level Datahiding

ugcnetcse-june2013-paper2

Answer key

## 35.0.39 UGC NET CSE | June 2013 | Part 2 | Question: 13 top

Which normal form is considered as adequate for usual database design?

A. 2NF
B. 3NF
C. 4NF
D. 5NF

ugcnetcse-june2013-paper2

Answer key

## 35.0.40 UGC NET CSE | June 2013 | Part 2 | Question: 42 top

A Boolean operator $\ominus$ is defined as follows:

1 $\ominus$ 1 =1, 1 $\ominus$ 0 = 0, 0 $\ominus$ 1 = 0 and 0 $\ominus$ 0 =1

What will be the truth value of the expression (x $\ominus$ y ) $\ominus$ z = x $\ominus$ (y $\ominus$ z)?

A. Always true
B. Always false
C. Sometimes true
D. True when x,y, z are all true

ugcnetcse-june2013-paper2

Answer key

## 35.0.41 UGC NET CSE | June 2013 | Part 2 | Question: 32 top

The task of correcting and preprocessing data is called as

A. Data streaming
B. Data cleaning
C. Data mining
D. Data storming

ugcnetcse-june2013-paper2

Answer key

## 35.0.42 UGC NET CSE | June 2013 | Part 2 | Question: 25 top

Which is the correct statement(s) for Non Recursive predictive parser?

$S1 : First(\alpha) = \{t \mid \alpha_{\Rightarrow}{}^{*}\, t\beta \text{ for some string } \beta\}_{\Rightarrow}{}^{*}\, t\beta$

$S2 : Follow(X) = \{a \mid S_{\Rightarrow}{}^{*}\, \alpha X a\beta \text{ for some string } \alpha and \beta\}$

A. Both statements S1 and S2 are incorrect
B. S1 is incorrect S2 is correct
C. S1 is correct S2 is incorrect
D. Both statements S1 and S2 are correct

ugcnetcse-june2013-paper2

Answer key

## 35.0.43 UGC NET CSE | June 2013 | Part 2 | Question: 31 top

Repository of information gathered from multiple sources, storing under unified scheme at a single site is called

A. Data mining
B. Meta Data
C. Data warehousing
D. Database

ugcnetcse-june2013-paper2

Answer key

## 35.0.44 UGC NET CSE | June 2013 | Part 2 | Question: 29 top

The value of postfix expression: 834+-382/+*2$3+ is

A. 17 B. 131 C. 64 D. 52

ugcnetcse-june2013-paper2

Answer key

## 35.0.45 UGC NET CSE | June 2013 | Part 2 | Question: 27 top

For a B-tree of height h and degree t, the total CPU time used to insert a node is

A. O(h log t) B. O(t log h) C. O($t^2$h) D. O(th)

ugcnetcse-june2013-paper2

Answer key

## 35.0.46 UGC NET CSE | June 2013 | Part 2 | Question: 12 top

A Network Schema

A. restricts to one to many relationship
B. permits to many to many relationship
C. Stores Data in a Database
D. Stores Data in a Relation

ugcnetcse-june2013-paper2

Answer key

## 35.0.47 UGC NET CSE | June 2013 | Part 2 | Question: 26 top

Given an open address hash table with load factor $\alpha < 1$, the expected number of probes in a successful search is

A. Atmost $\frac{1}{\alpha}$ ln $\left(\frac{1-\alpha}{\alpha}\right)$
B. Atmost $\frac{1}{\alpha}$ ln $\left(\frac{1}{1-\alpha}\right)$
C. Atleast $\frac{1}{\alpha}$ ln $\left(\frac{1}{1-\alpha}\right)$
D. Atleast $\frac{1}{\alpha}$ ln $\left(\frac{\alpha}{1-\alpha}\right)$

ugcnetcse-june2013-paper2

Answer key

## 35.0.48 UGC NET CSE | June 2013 | Part 2 | Question: 22 top

Given a grammar $S1 \rightarrow Sc, S \rightarrow SA \mid A, A \rightarrow aSb \mid ab$, there is a rightmost derivation $S1 \Rightarrow Sc \Rightarrow SAC \Rightarrow SaSbc$ Thus, $SaSbc$ is a right sentential form, and its handle is

A. $SaS$ B. $bc$ C. $Sbc$ D. $aSb$

ugcnetcse-june2013-paper2

Answer key

## 35.0.49 UGC NET CSE | June 2013 | Part 2 | Question: 19 top

In IPv4 header, the ____ field is needed to allow the destination host to determine which datagram a newly arrived fragments belongs to

A. identification
B. fragment offset
C. time to live
D. header checksum

ugcnetcse-june2013-paper2

Answer key

## 35.0.50 UGC NET CSE | June 2013 | Part 2 | Question: 18 top

In hierarchical routing with 4800 routers, what region and cluster sizes should be chosen to minimize the size of the routing table for the three-layer hierarchy?

A. 10 clusters, 24 regions and 20 routers
B. 12 clusters, 20 regions and 20 routers
C. 16 clusters, 12 regions and 25 routers
D. 15 clusters, 16 regions and 20 routers

ugcnetcse-june2013-paper2

Answer key

## 35.0.51 UGC NET CSE | June 2013 | Part 2 | Question: 16 top

In _____ substitution, a character in the plaintext is always changed to the same character in ciphertext, regardless of its position in the text.

A. polyalphabetic
B. monoalphabetic
C. transpositional
D. multialphabetic

ugcnetcse-june2013-paper2

Answer key

## 35.0.52 UGC NET CSE | June 2013 | Part 2 | Question: 15 top

Which of the following addresses is used to deliver a message to the correct application program running on a host?

A. Port
B. IP
C. Logical
D. Physical

ugcnetcse-june2013-paper2

Answer key

## 35.0.53 UGC NET CSE | June 2013 | Part 2 | Question: 14 top

If $D_1, D_2, \ldots D_n$ are domains in a relational model, then the relation is a table, which is a subset of

A. $D_1 + D_2 + \cdots + D_n$
B. $D_1 \times D_2 \times \cdots \times D_n$
C. $D_1 \cup D_2 \cup \cdots \cup D_n$
D. $D_1 - D_2 - \cdots - D_n$

ugcnetcse-june2013-paper2

Answer key

## 35.0.54 UGC NET CSE | December 2019 | Part 1 | Question: 1 top

Which of the learning outcomes are intended in teaching organized at understanding level?

A. Longer recall and retention of facts
B. Seeking of relationships and patterns among facts
C. Creative construction and critical interpretation of ideas
D. Mastery of facts and information

ugcnetcse-dec2019-paper1

## 35.0.55 UGC NET CSE | December 2019 | Part 1 | Question: 4 top

In which of the following types of learning materials, the presentations are highly structured and individualised?

A. Textbooks prescribed by the universities
B. Journals and the articles recommended for readings
C. Writings of great thinkers selected for reflective readings
D. Programmed instructional and modular learning material

ugcnetcse-dec2019-paper1

## 35.0.56 UGC NET CSE | June 2013 | Part 2 | Question: 8 top

What is the result of the expression(1&2)+(3/4)?

A. 1
B. 2
C. 3
D. 0

ugcnetcse-june2013-paper2

Answer key

## 35.0.57 UGC NET CSE | December 2019 | Part 1 | Question: 38 top

The themes of some Sustainable Development Goals are

a. Climate action
b. Sustainable cities and communities
c. Peace, justice and strong institutions
d. Skill development and decent employment
e. Green agriculture
f. Responsible consumption and production

Choose the most appropriate from those given below:

A. a, b, c, e and f
B. b, c , e and f
C. b, c , d, e and f
D. a, b, c and f

ugcnetcse-dec2019-paper1

## 35.0.58 UGC NET CSE | December 2019 | Part 1 | Question: 34 top

PCI stands for

A. Partial Component Interconnect
B. Partial Component Interaction
C. Peripheral Component Interconnect
D. Peripheral Component Interaction

ugcnetcse-dec2019-paper1

Answer key

## 35.0.59 UGC NET CSE | December 2019 | Part 1 | Question: 35 top

The national agency for responding to computer security incidents as and when they occur, is

A. CAT
B. CDAC
C. CCA
D. ICERT

ugcnetcse-dec2019-paper1

## 35.0.60 UGC NET CSE | December 2019 | Part 1 | Question: 36 top

Identify from the options given below, the co-benefit of Montreal Protocol

A. Impetus to development of energy efficient systems
B. Reduction in carbon dioxide (equivalent) emissions
C. Convergence of efforts of international community in addressing air pollution
D. Control of transboundary movement of hazardous waste

ugcnetcse-dec2019-paper1

## 35.0.61 UGC NET CSE | December 2019 | Part 1 | Question: 30 top

The following table gives the percentage of marks obtained by 6 students in 5 different subjects in an examination. The numbers in the parenthesis give the maximum marks in each subject. Answer the given questions based on the table:

| Subject (Max. Marks) / Name of student | Percentage (%) of marks obtained | | | | |
|---|---|---|---|---|---|
| | Maths (150) | Chemistry (130) | Physics (120) | Biology (100) | English (100) |
| Ankit | 90 | 50 | 80 | 60 | 70 |
| Amar | 100 | 60 | 70 | 40 | 80 |
| Sanya | 90 | 60 | 85 | 80 | 60 |
| Rahul | 80 | 75 | 65 | 90 | 90 |
| Puneet | 80 | 80 | 70 | 85 | 50 |
| Pooja | 70 | 75 | 50 | 80 | 40 |

In which subject the performance of the students is worst in terms of percentage of marks?

A. Chemistry
B. Physics
C. Biology
D. English

ugcnetcse-dec2019-paper1

## 35.0.62 UGC NET CSE | December 2019 | Part 1 | Question: 37 top

Under Green India Mission, how many hectares of degraded forest land is to be brought under afforestation?

A. 02 million hectares
B. 06 million hectares
C. 08 million hectares
D. 20 million hectares

ugcnetcse-dec2019-paper1

## 35.0.63 UGC NET CSE | December 2019 | Part 1 | Question: 39 top

The most dominant source of Benzene emissions in ambient air is

A. Cement industry
B. Cigarettes
C. Car exhausts
D. Paints and varnish

ugcnetcse-dec2019-paper1

## 35.0.64 UGC NET CSE | December 2019 | Part 1 | Question: 40 top

The most important pollutants that cause degradation of water quality in rivers and streams are

a. Bacteria
b. Nutrients
c. Metals
d. Total dissolved solids
e. Algae

Choose the most appropriate answer from the options given below:

A. a, b and c
B. a, b and d
C. a, b, d and e
D. a, b, c, d and e

ugcnetcse-dec2019-paper1

## 35.0.65 UGC NET CSE | December 2019 | Part 1 | Question: 41 top

Database WOS stands for

A. Web of Science
B. Web of Sources
C. World of Science
D. Web of Service

ugcnetcse-dec2019-paper1

## 35.0.66 UGC NET CSE | December 2019 | Part 1 | Question: 42 top

The major barriers for access to higher education in India are:

a. more opportunities of employment for less educated
b. government policies
c. language of instruction
d. economic status
e. competition from foreign universities
f. gender discrimination in society

Choose the correct answer from the options given below:

A. a, b and c
B. b, c and e
C. c, d and f
D. d, e and f

ugcnetcse-dec2019-paper1

## 35.0.67 UGC NET CSE | December 2019 | Part 1 | Question: 43 top

According to GATS (General Agreement on Trade and Services), higher education should be a commodity in the

A. domestic public sector
B. domestic private sector
C. non-trading sector
D. global marketplace

ugcnetcse-dec2019-paper1

## 35.0.68 UGC NET CSE | December 2019 | Part 1 | Question: 44 top

Which of the following statements is true in the Indian context?

A. Autonomous colleges can grant degrees independent of universities
B. Autonomous colleges can grant only bachelor's degree independent of universities
C. Except doctoral degrees, all other degrees and diplomas can be granted by autonomous colleges

D. Whatever may be the degree or diploma, autonomous colleges can grant them under their own name but under the seal of an affiliated university

ugcnetcse-dec2019-paper1

## 35.0.69 UGC NET CSE | December 2019 | Part 1 | Question: 11 top

When there is an animated discussion between a teacher and his or her students in the classroom, it can be classified as

A. Horizontal communication
B. Mechanical communication
C. Linear communication
D. Categorical communication

ugcnetcse-dec2019-paper1

## 35.0.70 UGC NET CSE | December 2019 | Part 1 | Question: 32 top

The term one gigabyte refers to:

A. $1024$ petabytes
B. $1024$ megabytes
C. $1024$ kilobytes
D. $1024$ bytes

ugcnetcse-dec2019-paper1

Answer key

## 35.0.71 UGC NET CSE | December 2019 | Part 1 | Question: 29 top

The following table gives the percentage of marks obtained by $6$ students in $5$ different subjects in an examination. The numbers in the parenthesis give the maximum marks in each subject. Answer the given questions based on the table:

| Subject (Max. Marks) / Name of student | Percentage (%) of marks obtained | | | | |
|---|---|---|---|---|---|
| | Maths (150) | Chemistry (130) | Physics (120) | Biology (100) | English (100) |
| Ankit | 90 | 50 | 80 | 60 | 70 |
| Amar | 100 | 60 | 70 | 40 | 80 |
| Sanya | 90 | 60 | 85 | 80 | 60 |
| Rahul | 80 | 75 | 65 | 90 | 90 |
| Puneet | 80 | 80 | 70 | 85 | 50 |
| Pooja | 70 | 75 | 50 | 80 | 40 |

How many students obtained $60\%$ and above marks in all the subjects?

A. Three
B. Two
C. One
D. Zero

ugcnetcse-dec2019-paper1

Answer key

## 35.0.72 UGC NET CSE | December 2019 | Part 1 | Question: 27 top

The following table gives the percentage of marks obtained by $6$ students in $5$ different subjects in an examination. The numbers in the parenthesis give the maximum marks in each subject. Answer the given questions based on the table:

| Subject (Max. Marks) / Name of student | Percentage (%) of marks obtained | | | | |
|---|---|---|---|---|---|
| | Maths (150) | Chemistry (130) | Physics (120) | Biology (100) | English (100) |
| Ankit | 90 | 50 | 80 | 60 | 70 |
| Amar | 100 | 60 | 70 | 40 | 80 |
| Sanya | 90 | 60 | 85 | 80 | 60 |
| Rahul | 80 | 75 | 65 | 90 | 90 |
| Puneet | 80 | 80 | 70 | 85 | 50 |
| Pooja | 70 | 75 | 50 | 80 | 40 |

What was the aggregate of marks obtained by Sanya in all the five subjects?

A. $375$ B. $395$ C. $455$ D. $475$

ugcnetcse-dec2019-paper1

Answer key

## 35.0.73 UGC NET CSE | December 2019 | Part 1 | Question: 13 top

A verbal communication technique used in teaching is

A. Slow expression of words
B. Varying the speed of voice and tone
C. Presentation without pause
D. Resorting to semantic jugglery

ugcnetcse-dec2019-paper1

## 35.0.74 UGC NET CSE | December 2019 | Part 1 | Question: 14 top

Which of the following modes of communication can be employed in a classroom for effective teaching?

a. Top-down
b. Iconic
c. Associational
d. Dissociational
e. Symbolic
f. Abstract

Choose the most appropriate option from the following:

A. (a), (b) and (f)
B. (c) , (e) and (f)
C. (b) , (c) and (e)
D. (a), (c) and (d)

ugcnetcse-dec2019-paper1

## 35.0.75 UGC NET CSE | December 2019 | Part 1 | Question: 15 top

Given below are two Statements – One is labelled as Assertion $(A)$ and other is labelled as Reason $(R)$:

Assertion $(A)$: Use of slang in formal teaching makes communication lively and interesting.

Reasons $(R)$: Academic decency demands the avoidance of slang in the classroom environment.

In the light of the above statements, choose the correct option:

A. Both $(A)$ and $(R)$ are true and $(R)$ is the correct explanation of $(A)$
B. Both $(A)$ and $(R)$ are true and $(R)$ is not the correct explanation of $(A)$
C. $(A)$ is true, but $(R)$ is false
D. $(A)$ is false, but $(R)$ is true

ugcnetcse-dec2019-paper1

## 35.0.76 UGC NET CSE | December 2019 | Part 1 | Question: 16 top

In a certain coding language, ‘$\mathrm{AEIOU}$’ is written as ‘$\mathrm{TNHDZ}$’. Using the same coding language, ‘$\mathrm{BFJPV}$’ will be written as

A. $\mathrm{UOIEA}$ B. $\mathrm{AEIOU}$ C. $\mathrm{CGKQW}$ D. $\mathrm{WQKGC}$

ugcnetcse-dec2019-paper1

Answer key

## 35.0.77 UGC NET CSE | December 2019 | Part 1 | Question: 17 top

If $3\%$ of $(a+b) = 7\%$ of $(ab)$

and $5\%$ of $(a-b) = 4\%$ of $(ab)$,

then what percentage of $b$ is $a$?

A. $\frac{47}{23}\%$
B. $\frac{23}{47}\%$
C. $\frac{4700}{23}\%$
D. $\frac{2300}{47}\%$

ugcnetcse-dec2019-paper1

## 35.0.78 UGC NET CSE | December 2019 | Part 1 | Question: 18 top

The sum of a number and its inverse is $-4$. The sum of their cubes is:

A. $-52$ B. $52$ C. $64$ D. $-64$

ugcnetcse-dec2019-paper1

Answer key

## 35.0.79 UGC NET CSE | December 2019 | Part 1 | Question: 28 top

The following table gives the percentage of marks obtained by $6$ students in $5$ different subjects in an examination. The numbers in the parenthesis give the maximum marks in each subject. Answer the given questions based on the table:

| Subject (Max. Marks) / Name of student | Percentage (%) of marks obtained | | | | |
|---|---|---|---|---|---|
| | Maths (150) | Chemistry (130) | Physics (120) | Biology (100) | English (100) |
| Ankit | 90 | 50 | 80 | 60 | 70 |
| Amar | 100 | 60 | 70 | 40 | 80 |
| Sanya | 90 | 60 | 85 | 80 | 60 |
| Rahul | 80 | 75 | 65 | 90 | 90 |
| Puneet | 80 | 80 | 70 | 85 | 50 |
| Pooja | 70 | 75 | 50 | 80 | 40 |

What is the average marks obtained by all the six students in Chemistry?

A. $86.66$ B. $76.66$ C. $66.66$ D. $60.00$

ugcnetcse-dec2019-paper1

Answer key

## 35.0.80 UGC NET CSE | December 2019 | Part 1 | Question: 19 top

A certain principal invested at compound interest payable yearly amounts to Rs. $10816.00$ in $3$ years and Rs. $11248.64$ in $4$ years. What is the rate of interest?

A. $3\%$ B. $4\%$ C. $4.5\%$ D. $5.5\%$

ugcnetcse-dec2019-paper1

## 35.0.81 UGC NET CSE | December 2019 | Part 1 | Question: 21 top

Which one of the following hetwabhasa (fallacy) is involved in the argument, “Sound is element because it is caused”?

A. Viruddha or contradictory middle
B. Satpratipaksa or inferentially contradicted middle
C. S$\bar{a}$dhyasama or the unproved middle
D. B$\bar{a}$dhita or non-inferentially contradicted middle

ugcnetcse-dec2019-paper1

## 35.0.82 UGC NET CSE | December 2019 | Part 1 | Question: 33 top

_____ is a wireless technology built in electronic gadgets for transferring data over short distance

A. WiFi B. Bluetooth C. Modem D. USB

ugcnetcse-dec2019-paper1

Answer key

## 35.0.83 UGC NET CSE | December 2019 | Part 1 | Question: 31 top

Which one of the following tasks is associated with changing appearance of a document in word processing?

A. Editing B. Formatting C. Writing D. Printing

ugcnetcse-dec2019-paper1

## 35.0.84 UGC NET CSE | December 2019 | Part 1 | Question: 5 top

Which of the following types of assessment is conducted periodically with an eye on standards?

A. Formative assessment
B. Summative assessment
C. Portfolio assessment
D. Performance assessment

ugcnetcse-dec2019-paper1

## 35.0.85 UGC NET CSE | December 2019 | Part 2 | Question: 80 top

Consider the following:

a. Trapping at local maxima
b. Reaching a plateau
c. Traversal along the ridge

Which of the following option represents shortcomings of the hill climbing algorithm?

A. (a) and (b) only
B. (a) and (c) only
C. (b) and (c) only
D. (a), (b) and (c)

ugcnetcse-dec2019-paper2

## 35.0.86 UGC NET CSE | December 2019 | Part 1 | Question: 6 top

A university teacher plans to improve the study habits of students in his/her class. Which type of research paradigm will be helpful in this regard?

A. Evaluative research paradigm
B. Fundamental research paradigm
C. Applied research paradigm
D. Action research paradigm

ugcnetcse-dec2019-paper1

## 35.0.87 UGC NET CSE | December 2019 | Part 1 | Question: 7 top

A researcher intends to make use of ICT in his/her research. What considerations should weigh most in such a decision?

a. Appropriateness of the tool used
b. Cost involved in procuring it
c. Availability of tools in the department where research is to be undertaken
d. Willingness of his/her supervisor to offer help
e. The company from which the ICT equipment has been procured

Choose your answer from the following options:

A. (a), (b) and (c)
B. (c) , (d) and (e)
C. (a), (c) and (d)
D. (b), (c) and (e)

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## 35.0.88 UGC NET CSE | December 2019 | Part 1 | Question: 8 top

Which of the following sampling procedures will be appropriate for conducting researches with empirico-inductive research paradigm?

A. Simple random sampling procedure
B. Systematic sampling procedure
C. Stratified sampling procedure
D. Any of the non-probability sampling procedures

ugcnetcse-dec2019-paper1

## 35.0.89 UGC NET CSE | December 2019 | Part 1 | Question: 2 top

Which of the following statements differentiate teaching from learning?

a. Teaching is a social act while learning is a personal act
b. Teaching implies learning
c. Teaching is like selling while learning is like buying
d. Teaching can occur without learning taking place
e. In teaching, influence is directed towards learning and

learner, while in learning it is usually towards oneself

Choose the correct answer from the following options:

A. (a), (c) and (e)
B. (a), (b) and (c)
C. (b), (c) and (d)
D. (c) , (d) and (e)

ugcnetcse-dec2019-paper1

## 35.0.90 UGC NET CSE | December 2019 | Part 1 | Question: 9 top

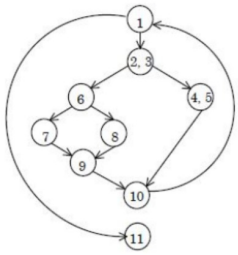
In which of the following formats 'Chapter Scheme' of the document has to be formally approved by a research degree committee in the university?

A. Thesis/dissertation
B. Seminar papers
C. Research articles
D. Research monographs

ugcnetcse-dec2019-paper1

## 35.0.91 UGC NET CSE | December 2019 | Part 2 | Question: 92 top

A flow graph $F$ with entry node $(1)$ and exit node $(11)$ is shown below:




Flowgraph F

What is the cyclomatic complexity of flowgraph $F$?

A. $2$
B. $3$
C. $4$
D. $5$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.92 UGC NET CSE | December 2019 | Part 2 | Question: 90 top

The Data Encryption Standard $(\mathrm{DES})$ has a function consists of four steps. Which of the following is correct order of these four steps?

A. an expansion permutation, $S$-boxes, an $\mathrm{XOR}$ operation, a straight permutation
B. an expansion permutation, an $\mathrm{XOR}$ operation, $S$-boxes, a straight permutation
C. a straight permutation, $S$-boxes, an $\mathrm{XOR}$ operation, an expansion permutation
D. a straight permutation, an $\mathrm{XOR}$ operation, $S$-boxes, an expansion permutation

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## 35.0.93 UGC NET CSE | December 2019 | Part 2 | Question: 76 top

Consider the following statements:

a. The running time of dynamic programming algorithm is always $O(n)$ [illegible]

Which of the statement(s) is (are) true?

A. Only (b) and (a)
B. Only (b)
C. Only (b) and (c)
D. Only (b) and (d)

ugcnetcse-dec2019-paper2

Answer key

## 35.0.94 UGC NET CSE | December 2019 | Part 2 | Question: 77 top

Consider the following statements:

a. Fiber optic cable is much lighter than copper cable
b. Fiber optic cable is not affected by power surges or electromagnetic interference
c. Optical transmission is inherently bidirectional

Which of the statements is (are) correct?

A. Only (a) and (b)
B. Only (a) and (c)
C. Only (b) and (c)
D. (a), (b) and (c)

ugcnetcse-dec2019-paper2

## 35.0.95 UGC NET CSE | December 2019 | Part 2 | Question: 78 top

Consider the following statements:

a. Windows Azure is a cloud-based operating system.
b. Google App Engine is an integrated set of online services for consumers to communicate and share with others.
c. Amazon Cloud Front is a web service for content delivery.

Which of the following statements is (are) correct?

A. Only (a) and (b)
B. Only (a) and (c)
C. Only (b) and (c)
D. (a), (b) and (c)

ugcnetcse-dec2019-paper2

## 35.0.96 UGC NET CSE | December 2019 | Part 2 | Question: 79 top

Consider the following statements with respect to network security:

a. Message confidentiality means that the sender and the receiver expect privacy
b. Message integrity means that the data must arrive at the receiver exactly as they were sent.
c. Message authentication means the receiver is ensured that the message is coming from the intended sender

Which of the statements is (are) correct?

A. Only (a) and (b)
B. Only (a) and (c)
C. Only (b) and (c)
D. (a), (b) and (c)

ugcnetcse-dec2019-paper2

Answer key

## 35.0.97 UGC NET CSE | December 2019 | Part 2 | Question: 81 top

Consider the following learning algorithms:

a. Logistic repression
b. Back propogation
c. Linear repression

Which of the following option represents classification algorithms?

A. (a) and (b) only
B. (a) and (c) only
C. (b) and (c) only
D. (a), (b) and (c)

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## 35.0.98 UGC NET CSE | December 2019 | Part 1 | Question: 12 top

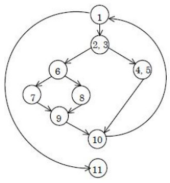
Information overload in a classroom environment by a teacher will lead to

A. High level participation
B. Semantic precision
C. Effective impression
D. Delayed feedback

ugcnetcse-dec2019-paper1

## 35.0.99 UGC NET CSE | December 2019 | Part 2 | Question: 91 top

A flow graph F with entry node $(1)$ and exit node $(11)$ is shown below:




Flowgraph F

How many nodes are there in flowgraph $F$

A. 9 B. 10 C. 11 D. 12

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Answer key

## 35.0.100 UGC NET CSE | December 2019 | Part 2 | Question: 82 top

Match List-I and List-II:

| | List I | | List II |
|---|---|---|---|
| (a) | Physical layer | (i) | Provide token management service |
| (b) | Transport layer | (ii) | Concerned with transmitting raw bits over a communication channel |
| (c) | Session Layer | (iii) | Concerned with the syntax and semantics of the information transmitted |
| (d) | Presentation layer | (iv) | True end-to-end layer from source to destination |

Choose the correct option from those given below:

A. (a)-(ii), (b)-(iv), (c) -(iii), (d)-(i)
B. (a)-(iv), (b)-(iii), (c) -(ii), (d)-(i)
C. (a)-(ii), (b)-(iv), (c) -(i), (d)-(iii)
D. (a)-(iv), (b)-(ii), (c) -(i), (d)-(iii)

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## 35.0.101 UGC NET CSE | December 2019 | Part 2 | Question: 84 top

Match the Agile Process models with the task performed during the model:

| | List I | | List II |
|---|---|---|---|
| (a) | Scrum | (i) | CRC cards |
| (b) | Adaptive software development | (ii) | Sprint backlog |
| (c) | Extreme programming | (iii) | <action> the <result> <by/for/of/to> a(n) <object> |
| (d) | Feature-driven development | (iv) | Time box release plan |

Choose the correct option from those given below:

A. (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)
B. (a)-(i), (b)-(iii), (c)-(ii), (d)-(iv)
C. (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)
D. (a)-(i), (b)-(iv), (c)-(ii), (d)-(iii)

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## 35.0.102 UGC NET CSE | December 2019 | Part 2 | Question: 85 top

Match List – I with List-II:

| | List I | | List II |
|---|---|---|---|
| (a) | Frame attribute | (i) | to create link in HTML |
| (b) | <tr> tag | (ii) | for vertical alignment of content in cell |
| (c) | Valign attribute | (iii) | to enclose each row in table |
| (d) | <a> tag | (iv) | to specify the side of the table frame that display border |

Choose the correct option from those given below:

A. (a)-(i) , (b)-(ii), (c)-(iii), (d)-(iv)
B. (a)-(ii) , (b)-(i), (c)-(iii), (d)-(iv)
C. (a)-(iv) , (b)-(iii), (c)-(ii), (d)-(i)
D. (a)-(iii) , (b)-(iv), (c)-(ii), (d)-(i)

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## 35.0.103 UGC NET CSE | December 2019 | Part 2 | Question: 86 top

An instruction is stored at location $500$ with its address field at location $501$. The address field has the value $400$. A processor register $R_1$ contains the number $200$. Match the addressing mode $(\text{List} - \text{I})$ given below with effective address $(\text{List-II})$ for the given instruction:

| | List I | | List II |
|---|---|---|---|
| (a) | Direct | (i) | 200 |
| (b) | Register indirect | (ii) | 902 |
| (c) | Index with $R_1$ as the index register | (iii) | 400 |
| (d) | Relative | (iv) | 600 |

Choose the correct option from those given below:

A. (a)-(iii), (b)-(i), (c) -(iv), (d)-(ii)
B. (a)-(i), (b)-(ii), (c) -(iii), (d)-(iv)
C. (a)-(iv), (b)-(ii), (c) -(iii), (d)-(i)
D. (a)-(iv), (b)-(iii), (c) -(ii), (d)-(i)

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## 35.0.104 UGC NET CSE | December 2019 | Part 2 | Question: 87 top

Match $\text{List-I}$ and $\text{List-II}$:

| | List I | | List II |
|---|---|---|---|
| (a) | Isolated $\text{I/O}$ | (i) | same set of control signal for $\text{I/O}$ and memory communication |
| (b) | Memory mapped $\text{I/O}$ | (ii) | separate instructions for $\text{I/O}$ and memory communication |
| (c) | $\text{I/O}$ interface | (iii) | requires control signals to be transmitted between the communicating units |
| (d) | Asynchronous data transfer | (iv) | resolve the differences in central computer and peripherals |

Choose the correct option from those given below:

A. (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)
B. (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)
C. (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)
D. (a)-(i), (b)-(ii), (c)-(iv), (d)-(iii)

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Answer key

## 35.0.105 UGC NET CSE | December 2019 | Part 2 | Question: 88 top

Match List-I with List-II:

| | List I | | List II |
|---|---|---|---|
| (a) | Micro operation | (i) | Specify micro operations |
| (b) | Micro programmed control unit | (ii) | Improve CPU utilization |
| (c) | Interrupts | (iii) | Control Memory |
| (d) | Micro instruction | (iv) | Elementary operation performed on data stored in registers |

Choose the correct option from those given below:

A. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)
B. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)
C. (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)
D. (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)

ugcnetcse-dec2019-paper2

Answer key

## 35.0.106 UGC NET CSE | December 2019 | Part 2 | Question: 89 top

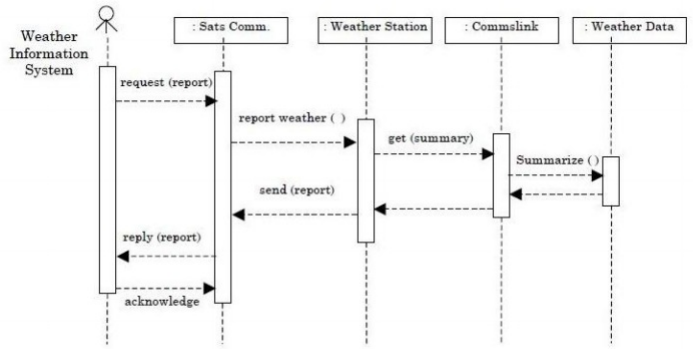


Figure 1

The sequence diagram given in Figure 1 for the Weather Information System takes place when an external system requests the summarized data from the weather station. The increasing order of lifeline for the objects in the system are:

A. Sat comms $\rightarrow$ Weather station $\rightarrow$ Commslink $\rightarrow$ Weather data
B. Sat comms $\rightarrow$ Comms link $\rightarrow$ Weather station $\rightarrow$ Weather data
C. Weather data $\rightarrow$ Comms link $\rightarrow$ Weather station $\rightarrow$ Sat Comms
D. Weather data $\rightarrow$ Weather station $\rightarrow$ Comms link $\rightarrow$ Sat Comms

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## 35.0.107 UGC NET CSE | December 2019 | Part 2 | Question: 83 top

According to the ISO – 9126 Standard Quality Model, match the attributes given in List-I with their definitions in List-II:

| | List I | | List II |
|---|---|---|---|
| (a) | Functionality | (i) | Relationship between level of performance and amount of resources |
| (b) | Reliability | (ii) | Characteristics related with achievement of purpose |
| (c) | Efficiency | (iii) | Effort needed to make for improvement |
| (d) | Maintainability | (iv) | Capability of software to maintain performance of software |

Choose the correct options from the ones given below:

A. (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)
B. (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)
C. (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)
D. (a)-(i), (b)-(ii), (c)-(iv), (d)-(iii)

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## 35.0.108 UGC NET CSE | December 2019 | Part 2 | Question: 75 top

The following multithreaded algorithm computes transpose of a matrix in parallel:

p Trans $(X, Y, N)$
if $N = 1$
then $Y[1,1] \leftarrow X[1,1]$
else partition $X$ into four $(N/2) \times (N/2)$ submatrices $X_{11}, X_{12}, X_{21}, X_{22}$
partition $Y$ into four $(N/2) \times (N/2)$ submatrices $Y_{11}, Y_{12}, Y_{21}, Y_{22}$
spawn p Trans $X_{11}, Y_{11}, N/2)$
spawn p Trans $X_{12}, Y_{12}, N/2)$
spawn p Trans $X_{21}, Y_{21}, N/2)$
spawn p Trans $X_{22}, Y_{22}, N/2)$
What is the asymptotic parallelism of the algorithm?

A. $T_1/T_\infty$ or $\theta(N^2/\lg N)$
B. $T_1/T_\infty$ or $\theta(N/\lg N)$
C. $T_1/T_\infty$ or $\theta(\lg N/N^2)$
D. $T_1/T_\infty$ or $\theta(\lg N/N)$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.109 UGC NET CSE | December 2019 | Part 1 | Question: 10 top

A research scholar while submitting his/her thesis, did not acknowledge in the preface the help and support of the respondents of questionnaires. This will be called an instance of

A. Technical lapse
B. Wilful negligence
C. Unethical act
D. Lack of respect

ugcnetcse-dec2019-paper1

## 35.0.110 UGC NET CSE | June 2013 | Part 2 | Question: 7 top

How many values can be held by an array A(-1, m; 1, m)?

A. m
B. $m^2$
C. m(m+1)
D. m(m+2)

ugcnetcse-june2013-paper2

Answer key

## 35.0.111 UGC NET CSE | June 2013 | Part 2 | Question: 9 top

How many times the word ‘print’ shall be printed by the following program segment?

for (i=1, i $\leq$ 2, i++)

for (j=1, j $\leq$ 2, j++)

for (k=1, k $\leq$ 2, k++)

printf(“print\n”)

A. 1 B. 3 C. 6 D. 8

ugcnetcse-june2013-paper2

Answer key

## 35.0.112 UGC NET CSE | December 2019 | Part 1 | Question: 23 top

Which of the following is converse of “Some $S$ is $P$”?

A. Some $S$ is not $P$
B. Some $P$ is not $S$
C. Some $P$ is $S$
D. No $P$ is $S$

ugcnetcse-dec2019-paper1

## 35.0.113 UGC NET CSE | June 2005 | Part 2 | Question: 3 top

The transitive closure of a relation $R$ on set $A$ whose relation matrix $\begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 1 & 0 & 0 \end{bmatrix}$ is :

A. $\begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 1 & 0 & 0 \end{bmatrix}$

B. $\begin{bmatrix} 1 & 1 & 0 \\ 1 & 1 & 0 \\ 1 & 1 & 0 \end{bmatrix}$

C. $\begin{bmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix}$

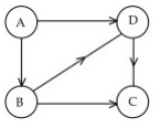
D. $\begin{bmatrix} 0 & 1 & 1 \\ 0 & 1 & 1 \\ 0 & 1 & 1 \end{bmatrix}$

ugcnetcse-june2005-paper2

Answer key

## 35.0.114 UGC NET CSE | December 2005 | Part 2 | Question: 23 top

Consider the graph, which of the following is a valid topological sorting?




A. ABCD B. BACD C. BADC D. ABDC

ugcnetcse-dec2005-paper2

Answer key

## 35.0.115 UGC NET CSE | December 2005 | Part 2 | Question: 24 top

The initial configuration of quaue is $a, b, c, d$. $'a'$ is at the front. To get the configuration $d, c, b, a$ how many deletions and additions required:

A. $2$ deletions, $3$ additions
B. $3$ deletions, $2$ additions
C. $3$ deletions, $4$ additions
D. $3$ deletions, $3$ additions

ugcnetcse-dec2005-paper2

Answer key

## 35.0.116 UGC NET CSE | December 2005 | Part 2 | Question: 25 top

Which traversal techniques lists the nodes of a binary search tree in ascending order?

A. post – order
B. in – order
C. pre – order
D. linear – order

ugcnetcse-dec2005-paper2

Answer key

## 35.0.117 UGC NET CSE | December 2005 | Part 2 | Question: 26 top

The data unit in the $\mathrm{TCP/IP}$ application Layer is called a _____ .

A. message
B. segment
C. datagram
D. frame

ugcnetcse-dec2005-paper2

Answer key

## 35.0.118 UGC NET CSE | December 2005 | Part 2 | Question: 27 top

Which of following file retrieval methods use hypermedia ?

A. $\mathrm{HTML}$
B. Veronica
C. $\mathrm{WAIS}$
D. $\mathrm{HTTP}$

ugcnetcse-dec2005-paper2

## 35.0.119 UGC NET CSE | December 2005 | Part 2 | Question: 28 top

Which of following is an example of a client - server model :

A. $\mathrm{DNS}$
B. $\mathrm{FTP}$
C. $\mathrm{TELNET}$
D. All the above

ugcnetcse-dec2005-paper2

## 35.0.120 UGC NET CSE | December 2005 | Part 2 | Question: 22 top

A hash function $f$ defined as $f(\mathrm{key}) = \mathrm{key} \bmod 7$, with linear probing it is used to insert the key $37, 38, 72, 48, 98, 11, 56$ into a table index from $0$ to $6$. What will be the locations of $11$:

A. $3$
B. $4$
C. $5$
D. $6$

ugcnetcse-dec2005-paper2

## 35.0.121 UGC NET CSE | December 2005 | Part 2 | Question: 29 top

_____ provide a method to recover data that has been delivered but not get used :

A. Segmentation
B. Concatenation
C. Transalation
D. Synchronization

ugcnetcse-dec2005-paper2

Answer key

## 35.0.122 UGC NET CSE | June 2005 | Part 2 | Question: 1 top

Which of the following is not true ?

A. Power of deterministic automata is equivalent to power of non-deterministic automata

B. Power of deterministic pushdown automata is equivalent to power of non-deterministic pushdown automata
C. Power of deterministic turing machine is equivalent to power of non-deterministic turing machine
D. All the above

ugcnetcse-june2005-paper2

Answer key

## 35.0.123 UGC NET CSE | June 2005 | Part 2 | Question: 2 top

Identify the language which is not context – free.

A. $L = \{wwR \mid w \in \{0,1\}*\}$
B. $L = \{a^n b^n \mid n \geq 0\}$
C. $L = \{ww \mid w \in \{0,1\}*\}$
D. $L = \{a^n b^m c^m d^n \mid n,m \geq 0\}$

ugcnetcse-june2005-paper2

Answer key

## 35.0.124 UGC NET CSE | June 2005 | Part 2 | Question: 4 top

Consider the relation on the set of non-negative integers defined by $x \equiv y$ if and only if:

A. $x \bmod 3 = 3 \bmod y$
B. $3 \bmod x \equiv 3 \bmod y$
C. $x \bmod 3 = y \bmod 3$
D. None of the above

ugcnetcse-june2005-paper2

Answer key

## 35.0.125 UGC NET CSE | June 2005 | Part 2 | Question: 48 top

Which interim standard describes inter-switching networking ?

A. $IS - 54$
B. $IS - 95$
C. $DS - 45$
D. $ANSI - 41$

ugcnetcse-june2005-paper2

Answer key

## 35.0.126 UGC NET CSE | June 2005 | Part 2 | Question: 5 top

Minimum number of individual shoes to be picked up from a dark room ( containing $10$ pair of shoes) if we have to get atleast one proper pair :

A. $2$
B. $20$
C. $11$
D. None of these

ugcnetcse-june2005-paper2

Answer key

## 35.0.127 UGC NET CSE | June 2005 | Part 2 | Question: 6 top

$(101011)_2 = (53)_b$, then $'b'$ is equal to :

A. $4$
B. $8$
C. $10$
D. $16$

ugcnetcse-june2005-paper2

Answer key

## 35.0.128 UGC NET CSE | December 2005 | Part 2 | Question: 30 top

Encryption and decryption are the functions of the _____ layer of $\text{OSI}$ model :

A. transport
B. session
C. router
D. presentation

ugcnetcse-dec2005-paper2

Answer key

## 35.0.129 UGC NET CSE | June 2005 | Part 2 | Question: 7 top

The logic expression $\overline{x}y\overline{z}+\overline{x}yz+xy\overline{z}+xyz$ reduces to :

A. $\overline{x}z$ B. $xyz$ C. $y$ D. $yz$

ugcnetcse-june2005-paper2

Answer key

## 35.0.130 UGC NET CSE | December 2005 | Part 2 | Question: 21 top

In what tree, for every node the height of its left subtree and right subtree differ at least by one:

A. Binary search tree
B. $\mathrm{AVL}$-tree
C. Threaded binary tree
D. Complete tree

ugcnetcse-dec2005-paper2

## 35.0.131 UGC NET CSE | December 2005 | Part 2 | Question: 19 top

An embedded printer provides :

A. Physical record key
B. An inserted Index
C. A secondary access path
D. All the above

ugcnetcse-dec2005-paper2

## 35.0.132 UGC NET CSE | December 2005 | Part 2 | Question: 4 top

Which sentence can be generated by $S \rightarrow d/bA, A \rightarrow d/ccA$ :

A. $\mathrm{bccddd}$ B. $\mathrm{aabccd}$ C. $\mathrm{ababccd}$ D. $\mathrm{abbbd}$

ugcnetcse-dec2005-paper2

Answer key

## 35.0.133 UGC NET CSE | December 2005 | Part 2 | Question: 5 top

Regular expression $a+b$ denotes the set :

A. $\{a\}$ B. $\{\in, a, b\}$ C. $\{a, b\}$ D. None of these

ugcnetcse-dec2005-paper2

Answer key

## 35.0.134 UGC NET CSE | December 2005 | Part 2 | Question: 6 top

Which of the following is divisible by $4$?

A. $100101100$ B. $1110001110001$ C. $11110011$ D. $10101010101010$

ugcnetcse-dec2005-paper2

Answer key

## 35.0.135 UGC NET CSE | December 2005 | Part 2 | Question: 7 top

A half-adder is also known as :

A. $\mathrm{AND}$ Circuit B. $\mathrm{NAND}$ Circuit C. $\mathrm{NOR}$ Circuit D. $\mathrm{EX\text{-}OR}$ Circuit

ugcnetcse-dec2005-paper2

Answer key

## 35.0.136 UGC NET CSE | December 2005 | Part 2 | Question: 8 top

Consider the following sequence of instructions :

$a=a \oplus b, b=a \oplus b, a=b \oplus a$ This Sequence

A. retains the value of the $a$ and $b$
B. complements the value of $a$ and $b$
C. swap $a$ and $b$
D. negates values of $a$ and $b$

ugcnetcse-dec2005-paper2

Answer key

## 35.0.137 UGC NET CSE | June 2005 | Part 2 | Question: 46 top

$PVM$ and $MPI$ Library functions are implemented on the top of the :

A. Universal Message Passing $(UMS)$
B. Network Interface Driver $(NID)$
C. Media Access Control $(MAC)$
D. None of these

ugcnetcse-june2005-paper2

## 35.0.138 UGC NET CSE | June 2019 | Part 1 | Question: 20 top

Today's media-society equation is largely

A. Mystical
B. Morally bound
C. Consumer conscious
D. Tradition centric

ugcnetcse-june2019-paper1

Answer key

## 35.0.139 UGC NET CSE | December 2005 | Part 2 | Question: 20 top

A locked file can be :

A. accessed by only one user
B. modified by users with the correct password
C. is used to hide sensitive information
D. both $B$ and $C$

ugcnetcse-dec2005-paper2

## 35.0.140 UGC NET CSE | December 2004 | Part 2 | Question: 8 top

An example of a connective which is not associative is :

A. AND
B. OR
C. EX-OR
D. NAND

ugcnetcse-dec2004-paper2

Answer key

## 35.0.141 UGC NET CSE | January 2017 | Part 3 | Question: 74 top

Unix command to change the case of first three lines of file "shortlist" from lower to upper

A. $\$\text{tr } '[a-z]'`[A-Z]' \text{ shortlist} \mid \text{head} - 3$
B. $\$\text{head} - 3 \text{ shortlist} \mid \text{tr}`[a-z]'`[A-Z]'$
C. $\$\text{tr head} - 3 \text{ shortlist } '[A-Z]'`[a-z]'$
D. $\$\text{tr shortlist head} - 3`[a-z]'`[A-Z]'$

ugcnetcse-jan2017-paper3 non-gate

Answer key

## 35.0.142 UGC NET CSE | January 2017 | Part 3 | Question: 75 top

Match the following vi commands in Unix :

| | List-I | | List-II |
|---|---|---|---|
| a. | :w | i. | saves the file and quits editing mode |
| b. | :x | ii. | escapes unix shell |
| c. | :q | iii. | saves file and remains in editing mode |
| d. | :sh | iv. | quits editing mode and no change are saved to the file |

**Codes :**

A. a-ii, b-iii, c-i, d-iv
B. a-iv, b-iii, c-ii, d-i
C. a-iii, b-iv, c-i, d-ii
D. a-iii, b-i, c-iv, d-ii

ugcnetcse-jan2017-paper3 non-gate

Answer key

## 35.0.143 UGC NET CSE | January 2017 | Part 2 | Question: 1 top

Consider a sequence $F_{00}$ defined as :

$F_{00}\ (0) = 1, F_{00}\ (1) = 1$

$F_{00}\ (n) = \frac{10 * F_{00}(n-1) + 100}{F_{00}(n-2)}$ for $n \geq 2$

Then what shall be the set of values of the sequence $F_{00}$ ?

A. $(1, 110, 1200)$
B. $(1, 110, 600, 1200)$
C. $(1, 2, 55, 110, 600, 1200)$
D. $(1, 55, 110, 600, 1200)$

ugcnetjan2017ii non-gate

Answer key

## 35.0.144 UGC NET CSE | January 2017 | Part 2 | Question: 46 top

Match the following :

| | List-I | | List-II |
|---|---|---|---|
| a. | Affiliate Marketing | i. | Vendors ask partners to place logos on partner's site. If customers click, come to vendors and buy. |
| b. | Viral Marketing | ii. | Spread your brand on the net by word-of-mouth. Receivers will send your information to their friends. |
| c. | Group Purchasing | iii. | Aggregating the demands of small buyers to get a large volume. Then negotiate a price. |
| d. | Bartering Online | iv. | Exchanging surplus products and services with the process administered completely online by an intermediary. Company receives "points" for its contribution. |

**Codes :**

A. a-i, b-ii, c-iii, d-iv
B. a-i, b-iii, c-ii, d-iv
C. a-iii, b-ii, c-iv, d-i
D. a-ii, b-iii, c-i, d-iv

ugcnetjan2017ii

Answer key

## 35.0.145 UGC NET CSE | January 2017 | Part 2 | Question: 50 top

Which of the following statements is/are true w.r.t. Enterprise Resource Planning (ERP)?

I. ERP automates and integrates majority of business processes
II. ERP provides access to information in a Real Time Environment
III. ERP is inexpensive to implement

A. I, II and III are false.
B. I and II false III true.
C. I and II true III false.
D. I true II and III are false.

ugcnetjan2017ii

Answer key

## 35.0.146 UGC NET CSE | January 2017 | Part 3 | Question: 73 top

Which of the following neural networks uses supervised learning?

A. Multilayer perception
B. Self organizing feature map
C. Hopfield network

A. (A) only
B. (B) only
C. (A) and (B) only
D. (A) and (C) only

ugcnetcse-jan2017-paper3 non-gate

Answer key

## 35.0.147 UGC NET CSE | January 2017 | Part 3 | Question: 69 top

At which of the following stage(s), the degeneracy do not occur in transportation problem?
($m, n$ represents number of sources and destinations respectively)

a. While the values of dual variables $u_i$ and $v_j$ are obtained
b. While obtaining an initial basic feasible solution
c. At any stage during the solution
d. At the stage when the solution is optimal

A. (a), (b) and (c)
B. (a),(c) and (d)
C. (a) and (d)
D. (a),(b),(c) and (d)

ugcnetcse-jan2017-paper3

Answer key

## 35.0.148 UGC NET CSE | June 2005 | Part 2 | Question: 50 top

Another name of $IEEE\ 802.11a$ is :

A. $WECA$
B. Fast Ethernet
C. Wi-Fi $5$
D. $802-11g$

ugcnetcse-june2005-paper2

## 35.0.149 UGC NET CSE | December 2004 | Part 2 | Question: 5 top

If $I_m$ denotes the set of integers modulo $m$, then the following are fields with respect to the operations of addition modulo $m$ and multiplication modulo $m$ :

i. $Z_{23}$
ii. $Z_{29}$
iii. $Z_{31}$
iv. $Z_{33}$

A. (i) only
B. (i) and (ii) only
C. (i), (ii) and (iii) only
D. (i), (ii), (iii) and (iv)

ugcnetcse-dec2004-paper2

## 35.0.150 UGC NET CSE | December 2004 | Part 2 | Question: 6 top

An example of a binary number which is equal to its $2$'s complement is :

A. $1100$
B. $1001$
C. $1000$
D. $1111$

ugcnetcse-dec2004-paper2

Answer key

## 35.0.151 UGC NET CSE | December 2004 | Part 2 | Question: 7 top

When a tri-state logic device is in the third state, then :

A. it draws low current
B. it does not draw any current
C. it draws very high current
D. it presents a low impedance

ugcnetcse-dec2004-paper2

Answer key

## 35.0.152 UGC NET CSE | December 2004 | Part 2 | Question: 9 top

Essential hazards may occur in :

A. Combinational logic circuits
B. Synchronous sequential logic circuits
C. Asynchronous sequential logic circuits working in the fundamental mode
D. Asynchronous sequential logic circuits working in the pulse mode

ugcnetcse-dec2004-paper2

Answer key

## 35.0.153 UGC NET CSE | June 2009 | Part 2 | Question: 44 top

The spacing between character pairs is called :

A. Kerning
B. x-height
C. intercap
D. serif

ugcnetcse-june2009-paper2

Answer key

## 35.0.154 UGC NET CSE | January 2017 | Part 3 | Question: 13 top

Which of the following statement(s) is/are correct?

A. Persistence is the term used to describe the duration of phosphorescence.
B. The control electrode is used to turn the electron beam on and off.
C. The electron gun creates a source of electrons which are focused into a narrow beam directed at the face of CRT.
D. All of the above

ugcnetcse-jan2017-paper3 non-gate

Answer key

## 35.0.155 UGC NET CSE | January 2017 | Part 3 | Question: 15 top

Match the following :

| | List-I | | List-II |
|---|---|---|---|
| a. | Glass | i. | Contains liquid crystal and serves as a bonding surface for a conductive coating |
| b. | Conductive coating | ii. | Acts as a conductor so that a voltage can be applied across the liquid crystal |
| c. | Liquid crystal | iii. | A substance which will polarize light when a voltage is applied to it |
| d. | Polarized film | iv. | A transparent sheet that polarizes light |

**Codes :**

A. a-i, b-ii, c-iii, d-iv
B. a-i, b-iii, c-ii, d-iv
C. a-iv, b-iii, c-ii, d-i
D. a-iv, b-ii, c-i, d-iii

ugcnetcse-jan2017-paper3 non-gate

Answer key

## 35.0.156 UGC NET CSE | January 2017 | Part 3 | Question: 57 top

In Artificial Intelligence(AI), what is present in the planning graph?

A. Sequence of levels
B. Literals
C. Variables
D. Heuristic estimates

ugcnetcse-jan2017-paper3 non-gate

Answer key

## 35.0.157 UGC NET CSE | January 2017 | Part 3 | Question: 58 top

What is the best method to go for the game playing problem?

A. Optimal Search
B. Random Search
C. Heuristic Search
D. Stratified Search

ugcnetcse-jan2017-paper3 non-gate

Answer key

## 35.0.158 UGC NET CSE | January 2017 | Part 3 | Question: 67 top

From the given data below:

$abbaabbaab$

which one of the following is not a word in the dictionary created by LZ-coding (the initial words are a,b)?

A. $ab$
B. $bb$
C. $ba$
D. $baab$

ugcnetcse-jan2017-paper3

Answer key

## 35.0.159 UGC NET CSE | January 2017 | Part 3 | Question: 68 top

With respect to a loop in the transportation table, which one of following is not correct?

A. Every loop has an odd no.of cells and atleast $5$.
B. Closed loops may or may not be square in shape.
C. All the cells in the loop that have a plus or minus sign, except the starting cell, must be occupied cells.
D. Every loop has an even no.of cells and atleast four.

ugcnetcse-jan2017-paper3

Answer key

## 35.0.160 UGC NET CSE | January 2017 | Part 3 | Question: 14 top

A segment is any object described by GKS commands and data that start with CREATE SEGMENT and Terminates with CLOSE SEGMENT command. What functions can be performed on these segments?

A. Translation and Rotation
B. Panning and Zooming
C. Scaling and Shearing
D. Translation, Rotation, Panning and Zooming

ugcnetcse-jan2017-paper3 non-gate

Answer key

## 35.0.161 UGC NET CSE | June 2005 | Part 2 | Question: 49 top

Theoretically, how many $1.25\ MHz$ Carriers are there in a $CDMA$ cell ?

A. $18$
B. $22$
C. $9$
D. $64$

ugcnetcse-june2005-paper2

## 35.0.162 UGC NET CSE | June 2019 | Part 1 | Question: 48 top

The present form of Inter University Board that was previously established for promoting cooperation and coordination among Universities is

A. UGC B. AIU C. NUEPA D. ICSSR

ugcnetcse-june2019-paper1

Answer key

## 35.0.163 UGC NET CSE | June 2009 | Part 2 | Question: 11 top

Assertion$(A)$: Bit maps are not often used in memory management .

Reason$(R)$: Searching a bitmap for a run of given length is a slow operation.

A. Both $(A)$ and $(R)$ are true and $(R)$ is correct explanation for $(A)$
B. Both$(A)$ and $(R)$ are true but $(R)$ is not correct explanation for $(A)$
C. $(A)$ is true $(R)$ is false
D. $(A)$ is false $(R)$ is true

ugcnetcse-june2009-paper2

## 35.0.164 UGC NET CSE | January 2017 | Part 3 | Question: 72 top

A neuron with inputs has the weight vector $[0.2 \quad -0.1 \quad 0.1]^T$ and a bias $\theta = 0$. If the input vector is $X = [0.2 \quad 0.4 \quad 0.2]^T$. Then the total input to the neuron is:

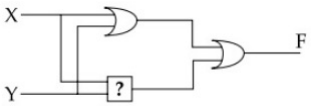
A. $0.20$ B. $1.0$ C. $0.02$ D. $-1.0$

ugcnetcse-jan2017-paper3

Answer key

## 35.0.165 UGC NET CSE | December 2005 | Part 2 | Question: 9 top

Consider the following circuit :




to make it a Tautology the $?$ should be :

A. $\text{NAND}$ gate B. $\text{AND}$ gate C. $\text{OR}$ gate D. $\text{EX-OR}$ gate

ugcnetcse-dec2005-paper2

Answer key

## 35.0.166 UGC NET CSE | December 2005 | Part 2 | Question: 10 top

When an inventor is placed between both inputs of an $\text{S-R}$ flip flop, the resulting flip flop is :

A. $JK$ flip-flop B. $D$ flip-flop C. $T$ flip-flop D. None of these

ugcnetcse-dec2005-paper2

Answer key

## 35.0.167 UGC NET CSE | June 2013 | Part 2 | Question: 44 top

A set of processors $P1, P2, \ldots Pk$ can execute in parallel if Bernstein's conditions are satisfied on a pairwise basis; that is $P1 \parallel P2 \parallel P3 \parallel \cdots \parallel Pk$ if and only if:

A. $Pi \parallel Pj$ for all $i \neq j$
B. $Pi \parallel Pj$ for all $i = j + 1$
C. $Pi \parallel Pj$ for all $i \leq j$
D. $Pi \parallel Pj$ for all $i \geq j$

ugcnetcse-june2013-paper2

Answer key

## 35.0.168 UGC NET CSE | June 2005 | Part 2 | Question: 26 top

Which of the following are Data link layer standard ?

1. Ethernet
2. $HSSI$
3. Frame Relay
4. $10$-base $T$
5. Token ring

A. $1,2$ B. $1,3,5$ C. $1,3,4,5$ D. $1,2,3,4,5$

ugcnetcse-june2005-paper2

## 35.0.169 UGC NET CSE | June 2005 | Part 2 | Question: 14 top

If a data-item is declared as a protected access specifier then it can be accessed :

A. Anywhere in the program
B. By the base and derived classes
C. Only by base class
D. Only by derived class

ugcnetcse-june2005-paper2

Answer key

## 35.0.170 UGC NET CSE | June 2005 | Part 2 | Question: 16 top

An Entity-relationship diagram is a tool to represent :

A. Data model B. Process model C. Event model D. Customer model

ugcnetcse-june2005-paper2

Answer key

## 35.0.171 UGC NET CSE | June 2005 | Part 2 | Question: 17 top

Which of the following tools is not required during system analysis phase of system development Life cycle ?

A. CASE Tool
B. RAD Tool
C. Reverse engineering tool
D. None of these

ugcnetcse-june2005-paper2

Answer key

## 35.0.172 UGC NET CSE | June 2005 | Part 2 | Question: 18 top

A black hole in a $DFD$ is a :

A. A data store with no in bound flows
B. A data store with only in bound flows
C. A data store with more than one in bound flow
D. None of these

ugcnetcse-june2005-paper2

## 35.0.173 UGC NET CSE | June 2005 | Part 2 | Question: 19 top

Multi-valued dependency among attribute is checked at which level ?

A. $2\,NF$ B. $3\,NF$ C. $4\,NF$ D. $5\,NF$

ugcnetcse-june2005-paper2

Answer key

## 35.0.174 UGC NET CSE | June 2005 | Part 2 | Question: 29 top

Which protocol is used to encapsulate a data pocket created of a higher $OSI$ model layer ?

A. $HDLC$ B. $SDLC$ C. $LAPB$ D. $LAPD$

ugcnetcse-june2005-paper2

## 35.0.175 UGC NET CSE | June 2005 | Part 2 | Question: 20 top

A $WINDOW$ into a portion of a data base is :

A. Schema
B. View
C. Query
D. Data Dictionary

ugcnetcse-june2005-paper2

## 35.0.176 UGC NET CSE | June 2005 | Part 2 | Question: 22 top

Which of the following statement is false ?

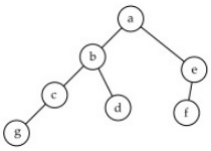
A. Every tree is a bipertite graph
B. A tree contains a cycle
C. A tree with n nodes contains $n-1$ edges
D. A tree is a connected graph

ugcnetcse-june2005-paper2

Answer key

## 35.0.177 UGC NET CSE | June 2005 | Part 2 | Question: 23 top

In the balanced binary tree given below, how many nodes will become unbalanced when a node is inserted as a child of the node "$g$" ?




A. $1$
B. $3$
C. $7$
D. $8$

ugcnetcse-june2005-paper2

Answer key

## 35.0.178 UGC NET CSE | June 2005 | Part 2 | Question: 24 top

If the postfix form of a string is $ABC+-D*$, the actual string is :

A. $(A-(B+C))^*D$
B. $((A-B)+C)^*D$
C. $((A+B)-C)^*D$
D. $(A+(B-C))^*D$

ugcnetcse-june2005-paper2

Answer key

## 35.0.179 UGC NET CSE | June 2005 | Part 2 | Question: 25 top

The algorithm that will efficiently sort an array that is nearly sorted except for the interchange of some adjacent pairs of numbers like $\{1,3,2,5,4,6\}$ is :

A. Quick sort
B. Bubble sort
C. Merge sort
D. Selection sort

ugcnetcse-june2005-paper2

Answer key

## 35.0.180 UGC NET CSE | June 2005 | Part 2 | Question: 27 top

Which type of Bridge would be used to connect an Ethernet Segment with a token ring Segment ?

A. Transparent Bridge
B. Source-Route Bridge
C. Translation Bridge
D. None of these

ugcnetcse-june2005-paper2

Answer key

## 35.0.181 UGC NET CSE | June 2005 | Part 2 | Question: 28 top

Which type of links are used for a connection between two $DTE$ devices ?

A. $X.21$ B. Frame Relay C. $ATM$ D. Modem

ugcnetcse-june2005-paper2

## 35.0.182 UGC NET CSE | June 2005 | Part 2 | Question: 21 top

What is the time required to insert an element in a stack with linked implementation?

A. $O(\log_2 n)$ B. $O(n)$ C. $O(n \log_2 n)$ D. $O(1)$

ugcnetcse-june2005-paper2

Answer key

## 35.0.183 UGC NET CSE | December 2005 | Part 2 | Question: 3 top

Let $A$ and $B$ be two arbitrary events, then :

A. $P(A \cap B) = P(A)P(B)$
B. $P(P \cup B) = P(A) + P(B)$
C. $P(A \cup B) \leq P(A) + P(B)$
D. $P(A/B) = P(A \cap B) + P(B)$

ugcnetcse-dec2005-paper2

Answer key

## 35.0.184 UGC NET CSE | December 2013 | Part 2 | Question: 23 top

_____ is often used to prove the correctness of a recursive function.

A. Diagnolization
B. Communitivity
C. Mathematical Induction
D. Matrix Manipulation

ugcnetcse-dec2013-paper2

Answer key

## 35.0.185 UGC NET CSE | December 2013 | Part 2 | Question: 40 top

## 35.0.186 UGC NET CSE | September 2013 | Part 2 | Question: 19 top

Find the number of ways to paint 12 offices so that 3 of them will be green, 2 of them pink, 2 of them yellow and the rest ones white.

A. 55,440 B. 1,66,320 C. 4.790E+08 D. 39,91,680

ugcnetsep2013ii combinatory

Answer key

## 35.0.187 UGC NET CSE | December 2013 | Part 3 | Question: 12 top

Which is the protocol for performing RPCs between applications in a language and system independent way?

A. Hyper Text Transmission Protocol (HTTP)
B. Simple Network Management Protocol (SNMP)
C. Simple Object Access Protocol (SOAP)
D. Simple Main Transfer Protocol (SMTP)

ugcnetcse-dec2013-paper3

Answer key

## 35.0.188 UGC NET CSE | December 2014 | Part 3 | Question: 21 top

Which of the following statements is not true ?

A. MPI_Isend and MPI_Irecv are non-blocking message passing routines of MPI.
B. MPI_Issend and MPI_Ibsend are non-blocking message passing routines of MPI.
C. MPI_Send and MPI_Recv are non-blocking message passing routines of MPI.
D. MPI_Ssend and MPI_Bsend are blocking message passing routines of MPI.

ugcnetcse-dec2014-paper3

Answer key

## 35.0.189 UGC NET CSE | December 2011 | Part 2 | Question: 2 top

The total number of comparisons in a bubble sort is

A. $0(\log n)$ B. $0(n \log n)$ C. $0(n)$ D. None of the above

ugcnetcse-dec2011-paper2

Answer key

## 35.0.190 UGC NET CSE | December 2013 | Part 3 | Question: 20 top

Match the following control strategies of protocol :

| | List – I | | List – II |
|---|---|---|---|
| a. | Forward movement | i. | Variable can be done with a constant, another variable or a function |
| b. | Unification | ii. | The entire conjunctive goal is executed |
| c. | Deep back-tracking | iii. | Previous sub goal to find alternative solutions |
| d. | Shallow back-tracking | iv. | Chooses sub goal with possible unifier |

**Codes :**

A. a-iv, b-i, c-ii, d-iii
B. a-ii, b-iv, c-i, d-iii
C. a-iii, b-i, c-iv, d-ii
D. a-ii, b-iii, c-iv, d-i

ugcnetcse-dec2013-paper3

Answer key

## 35.0.191 UGC NET CSE | December 2013 | Part 3 | Question: 27 top

In alpha-beta pruning, _____ is used to cut off the search at maximizing level only and ____ is used to cut off the search at maximizing level only.

A. alpha, beta B. beta, alpha C. alpha, alpha D. beta, beta

ugcnetcse-dec2013-paper3

Answer key

## 35.0.192 UGC NET CSE | June 2013 | Part 2 | Question: 49 top

Consider the following UNIX command:

*sort<in>temp; head-30<temp; nm temp*

Which of the following functions shall be performed by this command?

A. Sort, taking the input from “temp”, prints 20 lines from temp and delete the file temp
B. Sort eh file “temp”, removes 30 lines from temp and delete the file temp
C. Sort, taking the input from “in” and writing the output to “temp”, then prints 30 lines from temp on terminal. Finally “temp” is removed
D. Sort, taking the input from “temp”, and then prints 30 lines from “temp” on terminal. Finally “temp” is removed.

ugcnetcse-june2013-paper2

Answer key

## 35.0.193 UGC NET CSE | June 2005 | Part 2 | Question: 13 top

The data hiding is taken care by :

A. Abstraction B. Encapsulation C. Modularity D. Inheritance

ugcnetcse-june2005-paper2

Answer key

## 35.0.194 UGC NET CSE | June 2005 | Part 2 | Question: 30 top

What is the correct subnet mask to use for a class-$B$ address to support $30$ Networks and also have the most hosts possible ?

A. $255.255.255.0$
B. $255.255.192.0$
C. $255.255.240.0$
D. $255.255.248.0$

ugcnetcse-june2005-paper2

Answer key

## 35.0.195 UGC NET CSE | December 2005 | Part 2 | Question: 13 top

Data members and member function of a class by default is respectively :

A. private and public B. public C. public and private D. private

ugcnetcse-dec2005-paper2

## 35.0.196 UGC NET CSE | June 2005 | Part 2 | Question: 34 top

The dynamic binding occurs during the

A. Compile time
B. Run time
C. Linking time
D. Pre-processing time

ugcnetcse-june2005-paper2

## 35.0.197 UGC NET CSE | December 2005 | Part 2 | Question: 14 top

Function over loading done at :

A. Runtime
B. Compile time
C. Linking time
D. Switching from function to function

ugcnetcse-dec2005-paper2

Answer key

## 35.0.198 UGC NET CSE | December 2005 | Part 2 | Question: 15 top

What will be the value of $i$ for the following expression:

```
int i=11, i=3 ;
i + = (f>3) ? i & 2:5 ;
```

A. $2$ B. $5$ C. $13$ D. $12$

ugcnetcse-dec2005-paper2

Answer key

## 35.0.199 UGC NET CSE | December 2005 | Part 2 | Question: 16 top

A schema describes :

A. data elements
B. records and files
C. record relationship
D. all of the above

ugcnetcse-dec2005-paper2

Answer key

## 35.0.200 UGC NET CSE | December 2005 | Part 2 | Question: 17 top

One approach to standarolizing storing of data :

A. MIS
B. CODASYL
C. Stuctured Programing
D. None of the above

ugcnetcse-dec2005-paper2

Answer key

## 35.0.201 UGC NET CSE | December 2005 | Part 2 | Question: 18 top

In a relational schema, each tuple is divided in fields called :

A. Relations
B. Domains
C. Queries
D. All the above

ugcnetcse-dec2005-paper2

## 35.0.202 UGC NET CSE | December 2005 | Part 2 | Question: 12 top

The bitwise OR of $35$ with $7$ in $C$ will be :

A. $35$
B. $7$
C. $42$
D. $39$

ugcnetcse-dec2005-paper2

Answer key

## 35.0.203 UGC NET CSE | June 2005 | Part 2 | Question: 47 top

The frequency reuse plan is divided into cell grouping using how many cells, where the number of cells equals $N$ ?

A. $3$
B. $10$
C. $7$
D. $21$

ugcnetcse-june2005-paper2

## 35.0.204 UGC NET CSE | June 2005 | Part 2 | Question: 8 top

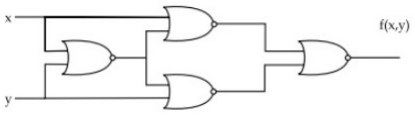
Which of the following logic has the maximum fan out ?

A. $RTL$
B. $ECL$
C. $NMOS$
D. $CMOS$

ugcnetcse-june2005-paper2

## 35.0.205 UGC NET CSE | June 2005 | Part 2 | Question: 10 top

Identify the logic function performed by the circuit shown




A. Exclusive-$OR$
B. $AND$
C. Exclusive-$NOR$
D. $NOR$

ugcnetcse-june2005-paper2

Answer key

## 35.0.206 UGC NET CSE | June 2005 | Part 2 | Question: 32 top

Which of the following is the most general phase – structured grammar ?

A. Regular
B. Context – Sensitive
C. Context free
D. None of these

ugcnetcse-june2005-paper2

## 35.0.207 UGC NET CSE | June 2005 | Part 2 | Question: 33 top

Which activity is not included in the first pass of two pass assemblers?

A. Build the symbol table
B. Construct the machine code
C. Separate mnemonic opcode and operand fields.
D. None of these

ugcnetcse-june2005-paper2

## 35.0.208 UGC NET CSE | June 2005 | Part 2 | Question: 35 top

Symbol Table can be used for :

A. Checking type compatibility
B. Suppressing duplication of error message
C. Storage allocation
D. All of these

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## 35.0.209 UGC NET CSE | June 2005 | Part 2 | Question: 9 top

Which of the following binary number is the same as its $2's$ complement :

A. $1010$
B. $0101$
C. $1000$
D. $1001$

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Answer key

## 35.0.210 UGC NET CSE | June 2005 | Part 2 | Question: 36 top

Moving Process from main memory to disk is called :

A. Caching
B. Termination
C. Swapping
D. Interruption

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Answer key

## 35.0.211 UGC NET CSE | June 2005 | Part 2 | Question: 37 top

The principle of Locality of reference justifies the use of :

A. Virtual memory
B. Interrupts
C. Cache memory
D. Secondary memory

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Answer key

## 35.0.212 UGC NET CSE | June 2005 | Part 2 | Question: 31 top

Which of the statements related to Compilers is wrong ?

A. Lexical analysis is breaking the input into tokens
B. Syntax analysis is for parsing the phrase
C. Syntax analysis is for analyzing the semantic
D. None of these

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Answer key

## 35.0.213 UGC NET CSE | June 2005 | Part 2 | Question: 38 top

Banker's algorithm is for

A. Dead lock Prevention
B. Dead lock Avoidance
C. Dead lock Detection
D. Dead lock creation

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Answer key

## 35.0.214 UGC NET CSE | June 2005 | Part 2 | Question: 40 top

Which of the following is not an Unix Command?

A. Whoami
B. wc
C. ls
D. put

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Answer key

## 35.0.215 UGC NET CSE | June 2005 | Part 2 | Question: 41 top

The capability maturity model $(err)$ defines $5$ levels :

| | |
|---|---|
| (a) Level 1 | (i) Managed |
| (b) Level 2 | (ii) Defined |
| (c) Level 3 | (iii) Repeatable |
| (d) Level 4 | (iv) Initial |
| (e) Level 5 | (v) Optimized |

Correct matching is :

| | $a$ | $b$ | $c$ | $d$ | $e$ |
|---|---|---|---|---|---|
| $A$ | $(i)$ | $(ii)$ | $(iii)$ | $(iv)$ | $(v)$ |
| $B$ | $(iv)$ | $(iii)$ | $(ii)$ | $(i)$ | $(v)$ |
| $C$ | $(v)$ | $(i)$ | $(iii)$ | $(ii)$ | $(iv)$ |
| $D$ | $(v)$ | $(ii)$ | $(i)$ | $(iii)$ | $(iv)$ |

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## 35.0.216 UGC NET CSE | June 2005 | Part 2 | Question: 42 top

Which one of the following is not a software process model?

A. Linear sequential model
B. Prototyping model
C. The spiral model
D. $COCOMO$ model

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## 35.0.217 UGC NET CSE | June 2005 | Part 2 | Question: 43 top

System Development Life-cycle has following stages :

I. Requirement analysis
II. Coding
III. Design
IV. Testing

Which option describes the correct sequence of stages ?

A. III, I, IV, II
B. II, III, I, IV
C. I, III, IV, II
D. None of the above

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## 35.0.218 UGC NET CSE | June 2005 | Part 2 | Question: 44 top

Which one is measure of software complexity ?

A. Number of lines of code $(LOC)$
B. Number of man years
C. Number of function points $(FP)$
D. All of the above

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## 35.0.219 UGC NET CSE | June 2005 | Part 2 | Question: 45 top

Which type of coupling is least preferred ?

A. Content coupling
B. Data coupling
C. Control coupling
D. Common coupling

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## 35.0.220 UGC NET CSE | June 2005 | Part 2 | Question: 39 top

Which is the correct definition of a valid process transition in an operating system ?

A. Wake up : Ready $\rightarrow$ Running
B. Dispatch: Ready $\rightarrow$ Running
C. Block : Ready $\rightarrow$ Running
D. Timer run out: Ready $\rightarrow$ Blocked

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Answer key

## 35.0.221 UGC NET CSE | December 2019 | Part 1 | Question: 22 top

Consider the following argument:

Statements: Some chairs are curtains.

All curtains are bedsheets.

Conclusion: Some chairs are bedsheets

What is the Mood of the above proposition?

A. IAI
B. IAA
C. IIA
D. AII

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## 35.0.222 UGC NET CSE | December 2005 | Part 2 | Question: 2 top

If the proposition $7P \Rightarrow Q$ is true, then the truth value of the proportion $7PV\ (P \Rightarrow Q)$ is :

A. True
B. Multi – Valued
C. False
D. Can not determined

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## 35.0.223 UGC NET CSE | December 2019 | Part 1 | Question: 24 top

Which one of the following fallacious hetu (middle term) is not uniformly concomitant with the major term?

A. Asatpratipaksa
B. Auyatireki
C. Anyonya-Asiddha
D. Suy$\bar{a}$bhic$\bar{a}$ra

ugcnetcse-dec2019-paper1

## 35.0.224 UGC NET CSE | December 2005 | Part 2 | Question: 47 top

Which of the following is a EDI standard ?

A. ANSI X.15
B. ANSI X.14
C. ANSI X.13
D. ANSI X.12

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Answer key

## 35.0.225 UGC NET CSE | June 2006 | Part 2 | Question: 20 top

A subclass having more than one super class is called_____.

A. Category
B. Classification
C. Combination
D. Partial participation

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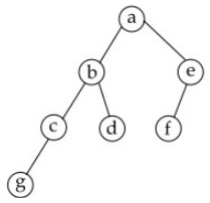
## 35.0.226 UGC NET CSE | June 2006 | Part 2 | Question: 21 top

In the balanced binary tree given below, how many nodes will become unbalanced when a node is inserted as a child of the node "$g$".



A. $1$ B. $3$ C. $7$ D. $8$

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## 35.0.227 UGC NET CSE | June 2006 | Part 2 | Question: 15 top

The function $sprintf()$ works like $printf()$, but operates on :

A. Data in a file B. stdrr C. stdin D. string

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## 35.0.228 UGC NET CSE | June 2006 | Part 2 | Question: 22 top

Preorder is also known as:

A. Depth first order
B. Breadth first order
C. Topological order
D. Linear order

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## 35.0.229 UGC NET CSE | June 2006 | Part 2 | Question: 24 top

If the post fix form of a string is $ABC+-D*$, The actual string is:

A. $(A-(B+C))*D$ B. $((A-B)+C)*D$ C. $((A+B)-C)*D$ D. $(A+(B-C)*D)$

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Answer key

## 35.0.230 UGC NET CSE | June 2006 | Part 2 | Question: 25 top

Application of data structure queue is :

A. Levelwise printing of tree
B. Implementation of priority queues
C. Function call implementation
D. Depth first search in a graph

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Answer key

## 35.0.231 UGC NET CSE | June 2006 | Part 2 | Question: 26 top

What is the transmission signal coding method for a $T1$ carrier called?

A. Binary B. $\mathrm{NRZ}$ C. Bipolar D. Manchester

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## 35.0.232 UGC NET CSE | June 2006 | Part 2 | Question: 27 top

How much bandwidth is required to send $132$ voice- grade channels by $\mathrm{FDM}$ on an international satellite system?

A. $500\ \mathrm{MHz}$ B. $10\ \mathrm{MHz}$ C. $1320\ \mathrm{MHz}$ D. $50\ \mathrm{MHz}$

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## 35.0.233 UGC NET CSE | June 2006 | Part 2 | Question: 28 top

What is the difference between the Ethernet frame preamble field and the $\mathrm{IEEE}\ 802.3$ preamble and start of frame Delimiter fields?

A. $1$ byte B. $1$ bit C. $4$ bits D. $16$ bits

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Answer key

## 35.0.234 UGC NET CSE | June 2006 | Part 2 | Question: 29 top

What is the function of a translating bridge?

A. Connect similar remote $\mathrm{LAN}$s
B. Connect similar local $\mathrm{LAN}$s
C. Connect different types of $\mathrm{LAN}$s
D. Translate the network adresses into a layer $2$ address

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## 35.0.235 UGC NET CSE | June 2006 | Part 2 | Question: 23 top

Which of the following statement is false?

A. Every tree is a bipartite graph
B. A tree contains a cycle
C. A tree with $n$ nodes contains $(n-1)$ edges
D. A tree is connected graph

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Answer key

## 35.0.236 UGC NET CSE | December 2005 | Part 2 | Question: 45 top

Sliding window concept of software project management is :

A. Preparation of comprehenciable plan
B. Preparation of the various stages of development
C. Ad-hoc planning
D. Requirement analysis

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Answer key

## 35.0.237 UGC NET CSE | June 2006 | Part 2 | Question: 14 top

$\#$ define max $(x, y)x = (x > y)?x : y$ is a macro definition, which can find the maximum of two numbers $x$ and $y$ if:

A. $x$ and $y$ are both integers only
B. $x$ and $y$ are both declared as float only
C. $x$ and $y$ are both declared as double only
D. $x$ and $y$ are both integers, float or double

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## 35.0.238 UGC NET CSE | June 2006 | Part 2 | Question: 12 top

A static variable is one :

A. Which cannot be initialized
B. Which is initialized once at the commencement of execution and cannot be changed at runtime
C. Which retains its value throughout the life of the program
D. Which is the same as an automatic variable but is placed at the head of a program

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## 35.0.239 UGC NET CSE | December 2005 | Part 2 | Question: 48 top

Analysis of large database to retrive information is called :

A. $\mathrm{OLTP}$
B. $\mathrm{OLAP}$
C. $\mathrm{OLDP}$
D. $\mathrm{TLPP}$

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Answer key

## 35.0.240 UGC NET CSE | June 2006 | Part 2 | Question: 18 top

Which of the following statement is wrong?

A. $2-$ phase locking protocol suffers from dead locks
B. Time-Stamp protocol suffers from more abort
C. Time-Stamp protocol suffers from cascading rollbacks whereas $2-$ phase locking protocol do not
D. None of these

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Answer key

## 35.0.241 UGC NET CSE | December 2005 | Part 2 | Question: 49 top

The cost of the network is usually determined by :

A. Time complexity
B. Switching complexity
C. Circuit complexity
D. None of these

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## 35.0.242 UGC NET CSE | December 2005 | Part 2 | Question: 50 top

The mechanism with which several uses can share a medium without interference is :

A. Frequency modulation
B. Amplitude modulation
C. Multiplexing
D. None of these

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Answer key

## 35.0.243 UGC NET CSE | June 2006 | Part 2 | Question: 1 top

Which of the following strings is in the language defined by grammar $S \rightarrow OA, A \rightarrow 1A/0A/1$

A. $01100$
B. $00101$
C. $10011$
D. $11111$

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Answer key

## 35.0.244 UGC NET CSE | June 2006 | Part 2 | Question: 2 top

For a complete graph with $N$ vertices, the total number of spanning trees is given by:

A. $2N-1$
B. $N^{N-1}$
C. $N^{N-2}$
D. $2N+1$

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Answer key

## 35.0.245 UGC NET CSE | June 2006 | Part 2 | Question: 13 top

If the following loop is implemented

```
{

    int num =0;

    do {-- num; printf ("%d", num); num++;}

     while(num>=0)

}
```

A. the loop will run infinitely many times
B. the program will not enter the loop
C. there will be compilation error reported
D. a run time error will be reported

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## 35.0.246 UGC NET CSE | June 2006 | Part 2 | Question: 3 top

The preposition $(p \rightarrow q) \wedge (\sim q \vee p)$ is equivalent to :

A. $q \rightarrow p$
B. $p \rightarrow q$
C. $(q \rightarrow p) \vee (p \rightarrow q)$
D. $(p \rightarrow q) \vee (q \rightarrow p)$

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## 35.0.247 UGC NET CSE | June 2006 | Part 2 | Question: 6 top

The number of $1$'s present in the binary representation of $(3 \times 512 + 7 \times 64 + 5 \times 8 + 3)_{10}$ is:

A. $8$ B. $9$ C. $10$ D. $11$

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## 35.0.248 UGC NET CSE | June 2006 | Part 2 | Question: 7 top

Which of the following expression removes static hazard from a two level $\text{AND-OR}$ gate implementation of $xy + z\bar{x}$

A. $xy + z\bar{x}$ B. $xy + z\bar{x} + wyz$ C. $xy + z\bar{x} + yz$ D. $xy + z\bar{x} + wz$

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## 35.0.249 UGC NET CSE | June 2006 | Part 2 | Question: 8 top

Which of the following logic has the maximum fan out?

A. $\text{RTL}$ B. $\text{ECL}$ C. $\text{NMOS}$ D. $\text{CMOS}$

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## 35.0.250 UGC NET CSE | June 2006 | Part 2 | Question: 9 top

In a weighted code with weight $6, 4, 2, -3$ the decimal $5$ is represented by:

A. $0101$ B. $0111$ C. $1011$ D. $1000$

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Answer key

## 35.0.251 UGC NET CSE | June 2006 | Part 2 | Question: 10 top

Upto how many variables, can the Karnaugh map be used?

A. $3$ B. $4$ C. $5$ D. $6$

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Answer key

## 35.0.252 UGC NET CSE | June 2006 | Part 2 | Question: 11 top

What is the output of the following program segment?

```
main()
{
int count, digit=0;
count=1;
while (digit<=9)
  {
printf ("%d/n",++count);++digit;
  }
}
```

A. $10$ B. $9$ C. $12$ D. $11$

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## 35.0.253 UGC NET CSE | June 2006 | Part 2 | Question: 5 top

Let $A = \{x | -1 < x < 1\} = B$. The function $f(x) = \frac{x}{2}$ from $A$ to $B$ is:

A. injective
B. surjective
C. both injective and surjective
D. neither injective nor surjective

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Answer key

## 35.0.254 UGC NET CSE | December 2019 | Part 1 | Question: 47 top

Read the passage carefully and answer questions that follow:

There is no doubt that the market as a reality and political economy as a theory played an important role in the liberal critique. But liberalism is neither the consequence nor the development of these; rather, the market played, in the liberal critique, the role of a "test, a locus of privileged experience where one can identify the effects of excessive governmentality and even weigh their significance; the analysis of the mechanisms of "dearth" or more generally, of the grain trade in the middle of the eighteenth century, was meant to show the point at which governing was always governing too much. Therefore, an analysis to make visible, in the form of evidence, the formation of the value and circulation of wealth – or, on the contrary, an analysis pre-supposing the intrinsic invisibility of the connection between individual profit-seeking and the growth of collective wealth-economics, in any case, shows a basic incompatibility between the optimal development of the economic process and maximisation of government procedures. It is by this, more than the play of ideas, the French or English economists broke away from mercantilism and commercialism; they freed reflection on economic practice from the hegemony of the "reason of state" and from the saturation of governmental intervention. By using it as a measure of "governing too much", they placed it at the limit of governmental action. Liberalism does not derive from juridical thought any more than it does from an economic analysis. It is not the idea of a political society, but the result of search for a liberal technology of a government.

The liberal critique examined the implications of

A. market expansion
B. too much governance
C. growth of political economy
D. politics of marketisation

ugcnetcse-dec2019-paper1

## 35.0.255 UGC NET CSE | June 2006 | Part 2 | Question: 19 top

Which data management language component enabled the DBA to define the schema components?

A. DML
B. Subschema DLL
C. Schema DLL
D. All of these

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## 35.0.256 UGC NET CSE | June 2006 | Part 2 | Question: 17 top

Immediate updates as a recovery protocol is preferable, when:

A. Database reads more than writes
B. Writes are more than reads
C. It does not matter as it is good in both the situations
D. There are only writes

ugcnetcse-june2006-paper2

## 35.0.257 UGC NET CSE | December 2006 | Part 2 | Question: 47 top

Which of the following is an EDI standard ?

A. ANSI $X.15$
B. ANSI $X.14$
C. ANSI $X.13$
D. ANSI $X.12$

47. Which of the following is an EDI standard ?
(A) ANSI X.15 (B) ANSI X.14
(C) ANSI X.13 (D) ANSI X.12

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## 35.0.258 UGC NET CSE | June 2006 | Part 2 | Question: 34 top

The action of passing the source program into the proper syntactic class is known as:

A. Syntax analysis
B. Lexical analysis
C. Interpretation analysis
D. Uniform symbol generation

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Answer key

## 35.0.259 UGC NET CSE | December 2005 | Part 2 | Question: 34 top

Which of the following is not collision Resolution Technique :

A. Hash addressing
B. Chainning
C. Indexing
D. None of these

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Answer key

## 35.0.260 UGC NET CSE | June 2006 | Part 2 | Question: 50 top

The use of a smart card represents a form of:

A. password encryption
B. user-ID encryption
C. authorization
D. authentication

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## 35.0.261 UGC NET CSE | December 2005 | Part 2 | Question: 35 top

Which activities is not included in the first pass of two pass assembler?

A. build the symbol table
B. construct the Intermediate code
C. separate memonic opcode and operand field.
D. none of these

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Answer key

## 35.0.262 UGC NET CSE | December 2005 | Part 2 | Question: 37 top

If you want to execute more than one program at a time, the systems software that are used must be capable of :

A. word processing
B. virtual memory
C. compiling
D. multitasking

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Answer key

## 35.0.263 UGC NET CSE | December 2005 | Part 2 | Question: 38 top

Which of the following checks cannot be carried out on the input data to a system?

A. Consistency check
B. Syntax check
C. Range check
D. All the above

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Answer key

## 35.0.264 UGC NET CSE | December 2005 | Part 2 | Question: 39 top

Nonmodifiable procedures are called :

A. Serially usable procedure
B. Concurrent procedure
C. Reentrant procedure
D. Topdown procedure

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Answer key

## 35.0.265 UGC NET CSE | December 2005 | Part 2 | Question: 40 top

Banker's algorithm is used for _____ purpose :

A. Deadlock avoidance
B. Deadlock removal
C. Deadlock prevention
D. Deadlock continuations

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Answer key

## 35.0.266 UGC NET CSE | December 2005 | Part 2 | Question: 41 top

The testing of software against SRS is called :

A. Acceptance testing
B. Integration testing
C. Regression testing
D. Series testing

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Answer key

## 35.0.267 UGC NET CSE | December 2005 | Part 2 | Question: 42 top

The lower degree of cohesion is :

A. logical cohesion
B. coincidential cohesion
C. procedural cohesion
D. communicational cohesion

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Answer key

## 35.0.268 UGC NET CSE | December 2005 | Part 2 | Question: 36 top

Producer consumer problem can be solved using :

A. semaphores
B. event counters
C. monitors
D. all the above

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Answer key

## 35.0.269 UGC NET CSE | December 2005 | Part 2 | Question: 43 top

The Reliability of the software is directly dependent upon :

A. Quality of the design
B. Programmer's experience
C. Number of error
D. Set of user requirements

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## 35.0.270 UGC NET CSE | June 2006 | Part 2 | Question: 49 top

Predictive modeling in data mining uses____technique.

A. Statistical
B. Association Discovery
C. Value prediction
D. None of these

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## 35.0.271 UGC NET CSE | June 2006 | Part 2 | Question: 47 top

Bluetooth technology uses the transmission media.

A. Radio links
B. Microwave links
C. VSAT communication
D. Optical fiber links

ugcnetcse-june2006-paper2

Answer key

## 35.0.272 UGC NET CSE | June 2006 | Part 2 | Question: 33 top

YACC builds up _____parsing table.

A. LALR
B. LR
C. SLR
D. LLR

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Answer key

## 35.0.273 UGC NET CSE | June 2006 | Part 2 | Question: 35 top

The dynamic binding occurs during the:

A. Compile time
B. Run time

C. Linking time

D. Pre-processing time

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Answer key

## 35.0.274 UGC NET CSE | June 2006 | Part 2 | Question: 16 top

A relation $R = \{A, B, C, D, E, F\}$ is given with following set of functional dependencies:

$F = \{A \rightarrow B, AD \rightarrow C, B \rightarrow F, A \rightarrow E\}$

Which of the following is candidate key?

A. $A$

B. $AC$

C. $AD$

D. None of these

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Answer key

## 35.0.275 UGC NET CSE | June 2006 | Part 2 | Question: 44 top

System study yields the following:

A. Requirement specifications

B. Prevailing process description

C. Data source identification

D. All the above

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## 35.0.276 UGC NET CSE | December 2005 | Part 2 | Question: 46 top

Which of the following transonission media is used in Blue tooth Technology :

A. Radio links

B. Microwave links

C. $\mathrm{VSAT}$ Communication

D. Fiber - optic

ugcnetcse-dec2005-paper2

## 35.0.277 UGC NET CSE | December 2019 | Part 1 | Question: 25 top

According to classical Indian school of logic, what is the correct sequence of steps involved in Anum$\bar{a}$na (influence)?

A. Upanaya, Pratij$\tilde{n}$a, Hetu, Ud$\bar{a}$harana, Nigmana

B. Pratij$\tilde{n}$a, Hetu, Upanaya, Ud$\bar{a}$harana, Nigmana

C. Pratij$\tilde{n}$a, Upanaya, Hetu, Ud$\bar{a}$harana, Nigmana

D. Pratij$\tilde{n}$a, Hetu, Ud$\bar{a}$harana, Upanaya, Nigmana

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## 35.0.278 UGC NET CSE | June 2006 | Part 2 | Question: 32 top

Tasks done in parsing are:

A. Check the validity of a source string

B. Determine the syntactic structure of a source string

C. Both **A** and **B**

D. None of these

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## 35.0.279 UGC NET CSE | June 2006 | Part 2 | Question: 40 top

The memory allocation scheme subjected to “external” fragmentation is :

A. Segmentation

B. Swapping

C. Demand paging

D. Multiple contiguous fixed partitions

ugcnetcse-june2006-paper2

Answer key

## 35.0.280 UGC NET CSE | June 2006 | Part 2 | Question: 46 top

$\mathrm{MMS}$ (Multimedia Messaging Service) uses _____ types of messages to perform messaging transactions.

A. $4$ B. $6$ C. $8$ D. $10$

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**35.0.281 UGC NET CSE | June 2006 | Part 2 | Question: 45** top

The $\mathrm{COCOMO}$ model is used for_____.

A. software design
B. software cost estimation
C. software cost approximation
D. software analysis

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Answer key

**35.0.282 UGC NET CSE | June 2006 | Part 2 | Question: 43** top

In a good software design, ____coupling is desirable between modules.

A. Highest B. Lowest C. Internal D. External

ugcnetcse-june2006-paper2

Answer key

**35.0.283 UGC NET CSE | June 2006 | Part 2 | Question: 36** top

The first operating system of Microprocessor is_____.

A. $\mathrm{ATLAS}$ B. $\mathrm{CP/M}$ C. $\mathrm{SAGE}$ D. $\mathrm{T.H.E}$

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**35.0.284 UGC NET CSE | June 2006 | Part 2 | Question: 42** top

In Software Metrics, $\mathrm{McCABE'S}$ cyclomatic number is given by following formula:

A. $c = e - n + 2p$ B. $c = e - n - 2p$ C. $c = e + n + 2p$ D. $c = e$–n*$2p$

ugcnetcse-june2006-paper2

**35.0.285 UGC NET CSE | June 2006 | Part 2 | Question: 41** top

In software project planning, work Breakdown structure must be_____.

A. A graph B. A tree C. A Eular's graph D. None of the above

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**35.0.286 UGC NET CSE | June 2006 | Part 2 | Question: 39** top

_____synchronize critical resources to prevent deadlock.

A. $P$- operator B. $V$- operator C. Semaphores D. Hard disk

ugcnetcse-june2006-paper2

Answer key

**35.0.287 UGC NET CSE | June 2006 | Part 2 | Question: 48** top

Downflow is the process associated with _____ and back up of data in a warehouse.

A. packaging B. archiving C. extraction D. loading

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**35.0.288 UGC NET CSE | June 2006 | Part 2 | Question: 38** top

A page fault_____.

A. is an error in specific page

B. is an access to the page not currently in main memory
C. occurs when a page program accesses a page of memory
D. is reference to the page which belongs to another program

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Answer key

## 35.0.289 UGC NET CSE | June 2006 | Part 2 | Question: 37 top

In processor management, round robin method essentially uses the preemptive version of_____.

A. FILO B. FIFO C. SJF D. Longest time first

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Answer key

## 35.0.290 UGC NET CSE | June 2006 | Part 2 | Question: 31 top

Which statement is wrong

A. If linked origin $\neq$ translated origin, relocation must be performed by the linker
B. If load $\neq$ linked origin, the loader must perform relocation
C. A linker always perform relocation, whereas some loaders do not
D. None of these

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Answer key

## 35.0.291 UGC NET CSE | June 2007 | Part 2 | Question: 7 top

Which of the following expression remove hazard form : $xy + z\bar{x}$?

A. $xy + z\bar{x}$ B. $xy + z\bar{x}$ C. $xy + z\bar{x} + yz$ D. $xy + z\bar{x} + wz$

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## 35.0.292 UGC NET CSE | December 2005 | Part 2 | Question: 32 top

A Top - down Parse generates

A. Left most derivation
B. Right – most derivation
C. Right most derivation in reverse
D. Left – most derivation in reverse

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Answer key

## 35.0.293 UGC NET CSE | June 2007 | Part 2 | Question: 24 top

Which algorithm has some average, worst case and best case time:

A. Binary search
B. Maximum of $n$ numbers
C. Quick sort
D. Fibonacci search

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## 35.0.294 UGC NET CSE | June 2007 | Part 2 | Question: 45 top

Which one of the following is a object-oriented approaches:

A. The Booch method
B. The Rambaugh method
C. The Load and Yomdon method
D. All of the above

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## 35.0.295 UGC NET CSE | June 2007 | Part 2 | Question: 46 top

Which technical concept sets cellular apart from all preceding mobile/ratio systems?

A. FM-Transmission
B. Duplex Functionality
C. Frequency Reuse
D. TDMA Technology

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## 35.0.296 UGC NET CSE | June 2007 | Part 2 | Question: 47 top

Wireless interconnection to the PSTN are also known as:

A. Localities
B. CLECs
C. POPs
D. IXCs

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Answer key

## 35.0.297 UGC NET CSE | June 2007 | Part 2 | Question: 48 top

Dimensional modeling in Data Mining refers to:

A. view and interrogate data
B. define structures and store data
C. retrieve information only
D. none of these

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## 35.0.298 UGC NET CSE | June 2007 | Part 2 | Question: 49 top

The U-NII (Unlicensed National Information Infrastructure) band operates at the _____frequency:

A. 2.4 GHz
B. 33 MHz
C. 5 GHz
D. 16 GHz

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## 35.0.299 UGC NET CSE | June 2007 | Part 2 | Question: 43 top

Match the following:

| | |
|---|---|
| (a) Unit test | (i) Requirements |
| (b) System test | (ii) Design |
| (c) Validation test | (iii) Code |
| (d) Integration test | (iv) System Engineering |

Which of the following is true:

A. a-ii, b-iii, c-iv, d-i
B. a-i, b-ii, c-iv, d-iii
C. a-iii, b-iv, c-i, d-ii
D. None of the above

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Answer key

## 35.0.300 UGC NET CSE | June 2007 | Part 2 | Question: 50 top

Which digital radio technology employs an $N = 1$ frequency – reuse plan?

A. GSM
B. TDMA
C. D AMPS
D. CDMA

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## 35.0.301 UGC NET CSE | December 2006 | Part 2 | Question: 5 top

If $(a^2 - b^2)$ is a prime number where a and b $\in$ N, then :

A. $a^2 - b^2 = 3$
B. $a^2 - b^2 = a - b$
C. $a^2 - b^2 = a + b$
D. $a^2 - b^2 = 5$

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## 35.0.302 UGC NET CSE | December 2006 | Part 2 | Question: 8 top

A sum of products expression can be implemented with _____ logic gates.

A. AND–OR B. NAND–OR C. AND–NOT D. OR–AND

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## 35.0.303 UGC NET CSE | December 2006 | Part 2 | Question: 10 top

Which of the following logic is the fastest ?

A. RTL B. ECL C. HTL D. HCL

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## 35.0.304 UGC NET CSE | December 2006 | Part 2 | Question: 12 top

Enumeration variables can be used in :

A. search statement like an integer variable
B. break statement
C. preprocessor commands
D. function statement

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## 35.0.305 UGC NET CSE | December 2006 | Part 2 | Question: 14 top

When one-dimensional character array of unspecified length is assigned an initial value :

A. an arbitrary character is automatically added to the end of the string
B. ‘o’ is added to the end of the string
C. length of the string is added to the end of the string
D. ‘end’ is added to the end of the string

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## 35.0.306 UGC NET CSE | December 2006 | Part 2 | Question: 46 top

The frequency band allocated for the downlink in GSM is :

A. $960 - 985\ MHz$ B. $935 - 960\ MHz$ C. $920 - 945\ MHz$ D. $930 - 955\ MHz$

**46.** The frequency band allocated for the downlink in GSM is :
(A) 960 - 985 MHz (B) 935 - 960 MHz
(C) 920 - 945 MHz (D) 930 - 955 MHz

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## 35.0.307 UGC NET CSE | December 2006 | Part 2 | Question: 4 top

Which of the following is not true ?

A. B. A–B=A ∩ ~ B C. D.

**4.** Which of the following is not true ?
(A)
(B) $A - B = A \cap \sim B$
(C)
(D)

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## 35.0.308 UGC NET CSE | June 2007 | Part 2 | Question: 42 top

Difference between flow-chart and data-flow diagram is:

A. there is no difference
B. usage in high level design and low level design
C. control flow and data flow
D. used in application programs and system programs

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## 35.0.309 UGC NET CSE | June 2007 | Part 2 | Question: 25 top

Application of data structure is queue is:

A. Level wise printing of tree.
B. Implementation of priority queues.
C. Function call implementation
D. Depth first search in a graph.

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Answer key

## 35.0.310 UGC NET CSE | June 2007 | Part 2 | Question: 40 top

Cache memory is:

A. High-Speed Register
B. Low-Speed $\mathrm{RAM}$
C. Non-Volatile $\mathrm{RAM}$
D. High-speed $\mathrm{RAM}$

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Answer key

## 35.0.311 UGC NET CSE | June 2007 | Part 2 | Question: 26 top

In case of Bus/Tree topology signal balancing issue is overcome by:

A. Strong Transmitter
B. Polling
C. Segmentation
D. Modulation

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## 35.0.312 UGC NET CSE | June 2007 | Part 2 | Question: 27 top

Which of the following techniques are used to control data flow?

1. Windowing
2. Routing
3. $\mathrm{RPCs}$
4. Buffering

A. $1,4$
B. $2,3,4$
C. $1,3,4$
D. $1,2,3,4$

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Answer key

## 35.0.313 UGC NET CSE | June 2007 | Part 2 | Question: 28 top

$\mathrm{TDM}$ is _____.

A. A primary /secondary type protocol
B. A peer/peer protocol
C. A Non-priority peer/peer protocol
D. A priority type protocol

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## 35.0.314 UGC NET CSE | June 2007 | Part 2 | Question: 29 top

What services does the Internet Layer provide?

1. Quality of service
2. Routing
3. Addressing
4. Connection-oriented delivery
5. Framming bits

A. $1,2,3$ B. $2,3,4$ C. $1,3,4,5$ D. $2,3,4,5$

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Answer key

## 35.0.315 UGC NET CSE | June 2007 | Part 2 | Question: 30 top

Which of the following protocols is used to prevent looping?

A. OSPF
B. Spanning tree
C. SRB
D. Fragment free switching

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## 35.0.316 UGC NET CSE | June 2007 | Part 2 | Question: 31 top

The parsing technique that avoids back tracking is:

A. Top-down parsing
B. Recursive-descent parsing
C. Predicative
D. Syntax tree

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Answer key

## 35.0.317 UGC NET CSE | June 2007 | Part 2 | Question: 41 top

Which of the following combination is preferred with respect to cohesion and coupling:

A. low and low B. low and high C. high and low D. high and high

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## 35.0.318 UGC NET CSE | June 2007 | Part 2 | Question: 32 top

A Top-down Parse generates:

A. Right-most derivation
B. Right-most derivation, in reverse
C. Left-most derivation
D. Left-most derivation, in reverse

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Answer key

## 35.0.319 UGC NET CSE | June 2007 | Part 2 | Question: 34 top

Symbol table can be used for:

A. Checking type compability
B. Suppressing duplication of error message
C. Storage allocation
D. All of these above

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Answer key

## 35.0.320 UGC NET CSE | June 2007 | Part 2 | Question: 35 top

Moving process from main memory to disk is called:

A. Caching B. Termination C. Swapping D. Interruption

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Answer key

## 35.0.321 UGC NET CSE | June 2007 | Part 2 | Question: 36 top

Part of a program where the shared memory is accessed and which should be executed indivisibly, is called:

A. Semaphores
B. Directory
C. Critical section
D. Mutual exclusion

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Answer key

## 35.0.322 UGC NET CSE | June 2007 | Part 2 | Question: 38 top

The “nice” command is used in Unix:

A. to decrease the priority of a process
B. to increase the priority of a process
C. to get the highest priority
D. nothing to do with the priorities

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Answer key

## 35.0.323 UGC NET CSE | June 2007 | Part 2 | Question: 39 top

Which page replacement policy suffers from Belady’s anomaly?

A. $\text{LRV}$
B. $\text{LFU}$
C. $\text{FIFO}$
D. $\text{OPTIMAL}$

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Answer key

## 35.0.324 UGC NET CSE | June 2007 | Part 2 | Question: 44 top

Problems with waterfall model are:

1. Real projects rarely follow this model proposes
2. It is often difficult for the customer
3. Working model is available only in the end
4. Developers are delayed unnecessarily

Which of the following is true:

A. $1$ and $4$ only
B. $2$ and $3$ only
C. $1,2$ and $3$ only
D. $1,2,3$ and $4$

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Answer key

## 35.0.325 UGC NET CSE | June 2007 | Part 2 | Question: 23 top

The equivalent postfix express for $d/(e+f)+b*c$ is :

A. $defbc/++$
B. $def+/bc+*$
C. $def+/bc*+$
D. None of these

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## 35.0.326 UGC NET CSE | June 2007 | Part 2 | Question: 8 top

How many $1$’s are present in the binary representation of $15 \times 256 + 5 \times 16 + 3$:

A. $8$
B. $9$
C. $10$
D. $11$

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Answer key

## 35.0.327 UGC NET CSE | June 2007 | Part 2 | Question: 5 top

Which of the following language is regular:

A. $L = \{a^n b^n | n \geq 1\}$
B. $L = \{a^n b^m c^n d^m | n, m \geq 1\}$
C. $L = \{a^n b^m | n, m \geq 1\}$
D. $L = \{a^n b^m c^n | n, m \geq 1\}$

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Answer key

## 35.0.328 UGC NET CSE | June 2007 | Part 2 | Question: 9 top

If $A \oplus B = C$, then:

A. $A \oplus C = B$
B. $B \oplus C = A$
C. $A \oplus B \oplus C = 1$
D. $A \oplus B \oplus C = 0$

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Answer key

## 35.0.329 UGC NET CSE | June 2007 | Part 2 | Question: 10 top

What is the maximum counting speed of a $4$-bit binary counter which is composed of Flip-Flop with a propagation delay of $25\,ns$?

A. $1\text{MHz}$ B. $10\text{MHz}$ C. $100\text{MHz}$ D. $4\text{MHz}$

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Answer key

## 35.0.330 UGC NET CSE | June 2007 | Part 2 | Question: 11 top

The following loop in $'C'$:

```
int i=0;
while (i++<0)i--;
```

A. will terminate
B. will go into an infinite loop
C. will give compilation error
D. will never be executed

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Answer key

## 35.0.331 UGC NET CSE | June 2007 | Part 2 | Question: 12 top

In case of right shift bitwise operator in $'C'$ language, after shifting $n$ bits, the leftmost $n$ bits:

A. are always filled with zeros
B. are always filled with ones
C. are filled with zeros or ones and is machine dependent
D. none of the above

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Answer key

## 35.0.332 UGC NET CSE | June 2007 | Part 2 | Question: 6 top

$2$'s complement of $-100$ is:

A. $00011100$ B. $10011101$ C. $10011100$ D. $11100100$

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Answer key

## 35.0.333 UGC NET CSE | June 2007 | Part 2 | Question: 13 top

What keyboard in class specification helps to hide data:

A. Public B. Private C. Static D. Void

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Answer key

## 35.0.334 UGC NET CSE | June 2007 | Part 2 | Question: 16 top

Which of the following statements is wrong?

A. $2-$ phase Locking Protocols suffer from dead locks.
B. Time-Stamp Protocols suffer from more aborts.
C. Time-Stamp Protocols suffer from cascading roll back where as $2-$phase locking Protocol donot.
D. None of these

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Answer key

## 35.0.335 UGC NET CSE | June 2007 | Part 2 | Question: 17 top

A recursive foreign key is a :

A. references a relation
B. references a table
C. references its own relation
D. references a foreign key

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Answer key

## 35.0.336 UGC NET CSE | June 2007 | Part 2 | Question: 18 top

A subclass having more than one super class is called:

A. Category
B. Classification
C. Combination
D. Partial Participation

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Answer key

## 35.0.337 UGC NET CSE | June 2007 | Part 2 | Question: 19 top

A Relation $R = \{A, B, C, D, E, F\}$ is given with following set of functional dependencies: $F = \{A \rightarrow B, AD \rightarrow C, B \rightarrow F, A \rightarrow E\}$. Which of the following is Candidate Key?

A. $A$
B. $AC$
C. $AD$
D. None of these

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Answer key

## 35.0.338 UGC NET CSE | June 2007 | Part 2 | Question: 20 top

Which statement is false regarding data Independence:

A. Hierarchical data model suffers from data Independence.
B. Network model suffers from data Independence.
C. Relational model suffers only from logical data Independence.
D. Relational model suffers only from physical data Independence.

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## 35.0.339 UGC NET CSE | June 2007 | Part 2 | Question: 21 top

The time required to find the shortest path in a graph with $n$ vertices and $e$ edges is:

A. $O(e)$
B. $O(n)$
C. $O(e^2)$
D. $O(n^2)$

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Answer key

## 35.0.340 UGC NET CSE | June 2007 | Part 2 | Question: 15 top

Runtime polymorphism can be achieved by:

A. Accessing virtual function through the pointer of the base class
B. Accessing virtual function through the object
C. The derived class
D. None of these

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Answer key

## 35.0.341 UGC NET CSE | June 2007 | Part 2 | Question: 22 top

Pre order is also known as:

A. Depth first order
B. Breadth first order
C. Topological order
D. Linear order

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## 35.0.342 UGC NET CSE | June 2007 | Part 2 | Question: 3 top

The maximum number of nodes in a binary tree of depth $10$:

A. $1024$
B. $2^{10} - 1$
C. $1000$
D. None of the above

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## 35.0.343 UGC NET CSE | December 2006 | Part 2 | Question: 48 top

An INT file in Windows 95 is :

A. a program file.
B. a message file.
C. a text file.
D. link file.

48. An INT file in Windows 95 is :
(A) a program file (B) a message file
(C) a text file (D) link file

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## 35.0.344 UGC NET CSE | December 2007 | Part 2 | Question: 43 top

An error message produced by an interactive system should have :

A. always the error code
B. the list of mistakes done by the user displayed
C. a non-judgmental approach
D. the past records of the occurrence of the same mistake

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## 35.0.345 UGC NET CSE | December 2007 | Part 2 | Question: 39 top

An example of a directory found in most $\text{UNIX}$ system is :

A. $\text{usr}$
B. $\text{waitpid}$
C. $\text{brk}$
D. $\text{unmap}$

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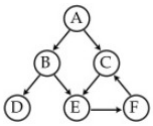
Answer key

## 35.0.346 UGC NET CSE | June 2007 | Part 2 | Question: 2 top

Depth ion travels of the following directed graph is:




A. $\text{A B C D E F}$
B. $\text{A B D E F C}$
C. $\text{A C E B D F}$
D. None of the above

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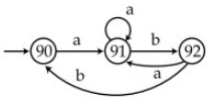
## 35.0.347 UGC NET CSE | June 2007 | Part 2 | Question: 1 top

The following determiniotic finite automata recognizes:




A. Set of all strings containing $'ab'$
B. Set of all strings containing $'aab'$
C. Set of all strings ending in $'abab'$
D. None of the above

ugcnetcse-june2007-paper2

Answer key

## 35.0.348 UGC NET CSE | December 2007 | Part 2 | Question: 48 top

Consider a typical mobile communication system. If $840$ frequencies are available, how many can be used in a given cell ?

A. $140$ B. $120$ C. $84$ D. $60$

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## 35.0.349 UGC NET CSE | December 2007 | Part 2 | Question: 47 top

With reference to implementation of different association mining algorithms, identify the correct statement :

A. The FP growth method was usually better than the best implementation of the apriori algorithm
B. Apriori algorithm is usually better than CHARM
C. Apriori algorithm is good when the support required is low
D. At very low support the number of frequent items becomes less

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## 35.0.350 UGC NET CSE | December 2007 | Part 2 | Question: 46 top

Given a parallel algorithm $A$ with computation time $t$, if parallel algorithm $A$ performs $m$ computational operation, then $p$ processors can execute algorithm $A$ in time given by :

A. $t/p$ B. $mt/p$ C. $t+(m-t)/p$ D. $(m-t)/p$

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## 35.0.351 UGC NET CSE | December 2007 | Part 2 | Question: 24 top

An example of a file extension is :

A. text B. pict C. mp$3$ D. web

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## 35.0.352 UGC NET CSE | December 2019 | Part 1 | Question: 49 top

Read the passage carefully and answer questions that follow:

There is no doubt that the market as a reality and political economy as a theory played an important role in the liberal critique. But liberalism is neither the consequence nor the development of these; rather, the market played, in the liberal critique, the role of a “test, a locus of privileged experience where one can identify the effects of excessive governmentality and even weigh their significance; the analysis of the mechanisms of “dearth” or more generally, of the grain trade in the middle of the eighteenth century, was meant to show the point at which governing was always governing too much. Therefore, an analysis to make visible, in the form of evidence, the formation of the value and circulation of wealth – or, on the contrary, an analysis pre-supposing the intrinsic invisibility of the connection between individual profit-seeking and the growth of collective wealth-economics, in any case, shows a basic incompatibility between the optimal development of the economic process and maximisation of government procedures. It is by this, more than the play of ideas, the French or English economists broke away from mercantilism and commercialism; they freed reflection on economic practice from the hegemony of the “reason of state” and from the saturation of governmental intervention. By using it as a measure of “governing too much”, they placed it at the limit of governmental action. Liberalism does not derive from juridical thought any more than it does from an economic analysis. It is not the idea of a political society, but the result of search for a liberal technology of a government.

What is incompatible with optimal economic development?

A. Play of ideas
B. Absence of commercialism
C. Political society
D. Excessive government procedures

ugcnetcse-dec2019-paper1

## 35.0.353 UGC NET CSE | June 2007 | Part 2 | Question: 4 top

The regular expression given below describes:

$r = (1+01)^*(0+\lambda)$

A. Set of all string not containing $'11'$
B. Set of all string not containing $'00'$
C. Set of all string containing $'01'$
D. Set of all string ending in $'0'$

ugcnetcse-june2007-paper2

Answer key

## 35.0.354 UGC NET CSE | December 2007 | Part 2 | Question: 18 top

If a relation is in 2NF and 3NF forms then :

A. no non-prime attribute is functionally dependent on other non-prime attributes
B. no non-prime attribute is functionally dependent on prime attributes
C. all attributes are functionally independent
D. prime attribute is functionally independent of all non-prime attributes

ugcnetcse-dec2007-paper2

## 35.0.355 UGC NET CSE | December 2007 | Part 2 | Question: 10 top

Amongst the logic families $DTL, TTL, ECL$ and $CMOS$, the family with the least power dissipation is :

A. $CMOS$ B. $DTL$ C. $TTL$ D. $ECL$

ugcnetcse-dec2007-paper2

Answer key

## 35.0.356 UGC NET CSE | December 2007 | Part 2 | Question: 9 top

The dual of the switching function $F = x + yz$ is given by :

A. x+yz B. x(y+z) C. (~x)+(~y)(~z) D. (~x)((~y)+(~z))

ugcnetcse-dec2007-paper2

Answer key

## 35.0.357 UGC NET CSE | December 2007 | Part 2 | Question: 6 top

A $WFF$ that is equivalent to the $WFF$ $x => y$ is :

A. $y => x$ B. ~$y => x$ C. ~$y =>$ ~$x$ D. $y =>$ ~$x$

ugcnetcse-dec2007-paper2

Answer key

## 35.0.358 UGC NET CSE | December 2019 | Part 1 | Question: 50 top

Read the passage carefully and answer question that follow:

There is no doubt that the market as a reality and political economy as a theory played an important role in the liberal critique. But liberalism is neither the consequence nor the development of these; rather, the market played, in the liberal critique, the role of a “test, a locus of privileged experience where one can identify the effects of excessive governmentality and even weigh their significance; the analysis of the mechanisms of “dearth” or more generally, of the grain trade in the middle of the eighteenth century, was meant to show the point at which governing was always governing too much. Therefore, an analysis to make visible, in the form of evidence, the formation of the value and circulation of wealth – or, on the contrary, an analysis pre-supposing the intrinsic

invisibility of the connection between individual profit-seeking and the growth of collective wealth-economics, in any case, shows a basic incompatibility between the optimal development of the economic process and maximization of government procedures. It is by this, more than the play of ideas, the French or English economists broke away from mercantilism and commercialism; they freed reflection on economic practice from the hegemony of the "reason of state" and from the saturation of governmental intervention. By using it as a measure of "governing too much", they placed it at the limit of governmental action. Liberalism does not derive from juridical thought any more than it does from an economic analysis. It is not the idea of a political society, but the result of search for a liberal technology of a government.

The passage is indicative of the author's preference to

A. economic hegemony of individuals
B. limit government control of economics
C. seek liberalism from juridical thought
D. promote individual profits

ugcnetcse-dec2019-paper1

## 35.0.359 UGC NET CSE | December 2005 | Part 2 | Question: 33 top

A general macroprocessor is an in built function of :

A. Loader
B. Linker
C. Editor
D. Assembler

ugcnetcse-dec2005-paper2

Answer key

## 35.0.360 UGC NET CSE | December 2005 | Part 2 | Question: 44 top

Succesive layer of design in software using but ton-up design is called :

A. Layer of Definement
B. Layer of Construction
C. Layer of abstraction
D. None of the above

ugcnetcse-dec2005-paper2

Answer key

## 35.0.361 UGC NET CSE | December 2019 | Part 2 | Question: 42 top

The time complexity to multiply two polynomials of degree $n$ using Fast Fourier transform method is:

A. $\theta(n \lg n)$
B. $\theta(n^2)$
C. $\theta(n)$
D. $\theta(\lg n)$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.362 UGC NET CSE | December 2019 | Part 2 | Question: 58 top

According to Dempster-Shafer theory for uncertainity management,

A. $Bel(A) + Bel(\neg A) \leq 1$
B. $Bel(A) + Bel(\neg A) \geq 1$
C. $Bel(A) + Bel(\neg A) = 1$
D. $Bel(A) + Bel(\neg A) = 0$

Where $Bel(A)$ denotes Belief of event $A$.

ugcnetcse-dec2019-paper2

Answer key

## 35.0.363 UGC NET CSE | December 2019 | Part 2 | Question: 66 top

Consider the following statements:

$S_1$: If a group $(G, *)$ is of order $n$, and $a \in G$ is such that $a^m = e$ for some integer $m \leq n$, then $m$ must divide $n$.

$S_2$: If a group $(G, *)$ is of even order, then there must be an element $a \in G$ such that $a \neq e$ and $a * a = e$.

Which of the statements is (are) correct?

A. Only $S_1$
B. Only $S_2$
C. Both $S_1$ and $S_2$
D. Neither $S_1$ and $S_2$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.364 UGC NET CSE | December 2019 | Part 2 | Question: 64 top

The order of schema $?10?101?$ and $???0??1$ are _____ and _____ respectively.

A. $5,3$ B. $5,2$ C. $7,5$ D. $8,7$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.365 UGC NET CSE | December 2019 | Part 2 | Question: 57 top

The full form of $\text{ICANN}$ is

A. Internet Corporation for Assigned Names and Numbers
B. Internet Corporation for Assigned Numbers and Names
C. Institute of Cooperation for Assigned Names and Numbers
D. Internet Connection for Assigned Names and Numbers

ugcnetcse-dec2019-paper2

Answer key

## 35.0.366 UGC NET CSE | December 2019 | Part 2 | Question: 63 top

Let $\mathbf{W}_{ij}$ represents weight between node $i$ at layer $k$ and node $j$ at layer $(k-1)$ of a given multilayer perceptron. The weight updation using gradient descent method is given by

A. $\mathbf{W}_{ij}(t+1) = \mathbf{W}_{ij}(t) + \alpha \frac{\partial \mathbf{E}}{\partial \mathbf{W}_{ij}}, 0 \leq \alpha \leq 1$

B. $\mathbf{W}_{ij}(t+1) = \mathbf{W}_{ij}(t) - \alpha \frac{\partial \mathbf{E}}{\partial \mathbf{W}_{ij}}, 0 \leq \alpha \leq 1$

C. $\mathbf{W}_{ij}(t+1) = \alpha \frac{\partial \mathbf{E}}{\partial \mathbf{W}_{ij}}, 0 \leq \alpha \leq 1$

D. $\mathbf{W}_{ij}(t+1) = -\alpha \frac{\partial \mathbf{E}}{\partial \mathbf{W}_{ij}}, 0 \leq \alpha \leq 1$

Where $\alpha$ and $E$ represents learning rate and Error in the output respectively.

ugcnetcse-dec2019-paper2

## 35.0.367 UGC NET CSE | December 2019 | Part 2 | Question: 62 top

A fuzzy conjuction operators, $t(x,y)$, and a fuzzy disjunction operator, $s(x,y)$, form a pair if they satisfy: $t(x,y) = 1 - s(1-x, 1-y)$.

If $t(x,y) = \frac{xy}{(x+y-xy)}$ then $s(x,y)$ is given by

A. $\frac{x+y}{1-xy}$ B. $\frac{x+y-2xy}{1-xy}$ C. $\frac{x+y-xy}{1-xy}$ D. $\frac{x+y-xy}{1+xy}$

ugcnetcse-dec2019-paper2

## 35.0.368 UGC NET CSE | December 2019 | Part 2 | Question: 61 top

Consider the following models:

$M_1$: Mamdani model

$M_2$: Takagi – Sugeno – Kang model

$M_3$: Kosko's additive model $(SAM)$

Which of the following option contains examples of additive rule model?

A. Only $M_1$ and $M_2$ B. Only $M_2$ and $M_3$ C. Only $M_1$ and $M_3$ D. $M_1$, $M_2$ and $M_3$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.369 UGC NET CSE | December 2004 | Part 2 | Question: 39 top

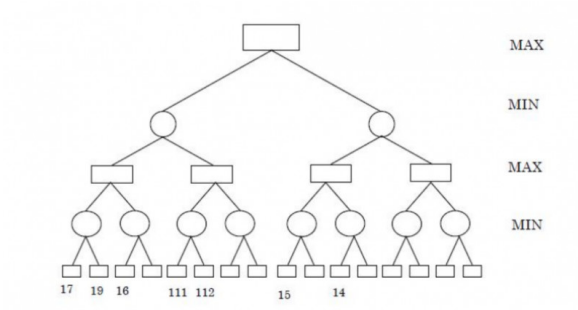
Non modifiable procedures are called

A. Serially useable procedures
B. Concurrent procedures
C. Reentrant procedures
D. Topdown procedures

ugcnetcse-dec2004-paper2

## 35.0.370 UGC NET CSE | December 2019 | Part 2 | Question: 60 top

Consider the game tree given below:




Here ◯ and ☐ represent MIN and MAX nodes respectively, The value of the root node of the game tree is:

A. $14$ B. $17$ C. $111$ D. $112$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.371 UGC NET CSE | December 2019 | Part 2 | Question: 59 top

Consider the following statements:

$S_1$ : $\forall x P(x) \vee \forall x Q(x)$ and $\forall x(P(x) \vee Q(x))$ are not logically equivalent.

$S_2$ : $\exists x P(x) \wedge \exists x Q(x)$ and $\exists x(P(x) \wedge Q(x))$ are not logically equivalent

Which of the following statements is/are correct?

A. Only $S_1$ B. Only $S_2$ C. Both $S_1$ and $S_2$ D. Neither $S_1$ nor $S_2$

ugcnetcse-dec2019-paper2

## 35.0.372 UGC NET CSE | December 2019 | Part 2 | Question: 38 top

In a B-Tree, each node represents a disk block. Suppose one block holds $8192$ bytes. Each key uses $32$ bytes. In a B-tree of order $M$ there are $M-1$ keys. Since each branch is on another disk block, we assume a branch is of $4$ bytes. The total memory requirement for a non-leaf node is

A. $32M-32$
B. $36M-32$
C. $36M-36$
D. $32M-36$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.373 UGC NET CSE | December 2019 | Part 2 | Question: 68 top

The Reduced Instruction Set Computer $(\mathrm{RISC})$ characteristics are:

a. Single cycle instruction execution
b. Variable length instructions
c. Instructions that manipulate operands in memory
d. Efficient instruction pipeline

Choose the correct characteristics from

the options given below:

A. (a) and (b) B. (b) and (c) C. (a) and (d) D. (c) and (d)

ugcnetcse-dec2019-paper2

Answer key

## 35.0.374 UGC NET CSE | December 2019 | Part 2 | Question: 36 top

A clique in an undirected graph $G = \langle V, E \rangle$ is a subset $V' \subseteq V$ of vertices, such that

A. If $(u, v) \in E$ then $u \in V'$ and $v \in V'$
B. If $(u, v) \in E$ then $u \in V'$ or $v \in V'$
C. Each pair of vertices in $V'$ is connected by an edge
D. All pairs of vertices in $V'$ are not connected by an edge

ugcnetcse-dec2019-paper2

## 35.0.375 UGC NET CSE | December 2019 | Part 2 | Question: 73 top

Two concurrent executing transactions $T_1$ and $T_2$ are allowed to update same stock item say $'A'$ in an uncontrolled manner. In such scenario, following problems may occur:

a. Dirty read problem
b. Lost update problem
c. Transaction failure
d. Inconsistent database state

Which of the following option is correct if database system has no concurrency module and allows concurrent execution of above two transactions?

A. (a), (b) and (c) only
B. (c) and (d) only
C. (a) and (b) only
D. (a), (b) and (d) only

ugcnetcse-dec2019-paper2

## 35.0.376 UGC NET CSE | December 2019 | Part 2 | Question: 8 top

How many reflexive relations are there on a set with $4$ elements?

A. $2^4$ B. $2^{12}$ C. $4^2$ D. $2$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.377 UGC NET CSE | December 2019 | Part 2 | Question: 14 top

What is the output of the following $C$ program?

```
# include <stdio.h>
main ()
{
   int i, j, x=0;
   for (i=0; i<5; ++i)
   for (j=0; j<i; ++j)
   {
   x+=(i+j-1);
   break;
   }
printf("%d", x);
}
```

A. $6$ B. $5$ C. $4$ D. $3$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.378 UGC NET CSE | December 2019 | Part 2 | Question: 13 top

The following program is stored in the memory unit of the basic computer. Give the content of accumulator register in hexadecimal after the execution of the program.

| Location | Instruction |
|---|---|
| 010 | CLA |
| 011 | ADD 016 |
| 012 | BUN 014 |
| 013 | HLT |
| 014 | AND 017 |
| 015 | BUN 013 |
| 016 | C1A5 |
| 017 | 93C6 |

A. $\mathrm{A1B4}$ B. $81\mathrm{B4}$ C. $\mathrm{A184}$ D. $8184$

ugcnetcse-dec2019-paper2

**35.0.379 UGC NET CSE | December 2019 | Part 2 | Question: 12** top

Given following equation:

$(142)_b + (112)_{b-2} = (75)_8$, find base $b$.

A. $3$ B. $6$ C. $7$ D. $5$

ugcnetcse-dec2019-paper2

Answer key

**35.0.380 UGC NET CSE | December 2019 | Part 2 | Question: 11** top

A micro instruction format has microoperation field which is divided into $2$ sunbfields $F1$ and $F2$ , each having $15$ distinct microoperations, condition field $\mathrm{CD}$ for four status bits, branch field $\mathrm{BR}$ having four options used in conjunction with address field $\mathrm{AD}$. The address space is of $128$ memory words. The size of micro instruction is:

A. $19$ B. $18$ C. $17$ D. $20$

ugcnetcse-dec2019-paper2

Answer key

**35.0.381 UGC NET CSE | December 2019 | Part 2 | Question: 10** top

A computer uses a memory unit of $512\,K$ words of $32$ bits each. A binary instruction code is stored in one word of the memory. The instruction has four parts: an addressing mode field to specify one of the two-addressing mode (direct and indirect), an operation code, a register code part to specify one of the $256$ registers and an address part. How many bits are there in addressing mode part, opcode part, register code part and the address part?

A. $1,3,9,19$ B. $1,4,9,18$ C. $1,4,8,19$ D. $1,3,8,20$

ugcnetcse-dec2019-paper2

Answer key

**35.0.382 UGC NET CSE | December 2004 | Part 2 | Question: 44** top

In transform analysis, input portion is called :

A. Afferent branch
B. Efferent branch
C. Central Transform
D. None of the above

ugcnetcse-dec2004-paper2

Answer key

## 35.0.383 UGC NET CSE | December 2019 | Part 2 | Question: 67 top

Consider the following statements with respect to duality in $\mathrm{LPP}$:

a. The final simplex table gives the solution of the primal and dual problems

b. Given the solution of the primal problem, the solution of the dual problem can be obtained from the final simplex table

Which of the statements is (are) correct?

A. Only (a) and (b)
B. Only (a) and (c)
C. only (b) and (c)
D. (a), (b) and (c)

ugcnetcse-dec2019-paper2

## 35.0.384 UGC NET CSE | December 2019 | Part 2 | Question: 69 top

Which of the following binary codes for decimal digits are self complementing?

A. $8421$ code
B. $2421$ code
C. excess-$3$ code
D. excess-$3$ gray code

Choose the correct option:

A. (a) and (b)
B. (b) and (c)
C. (c) and (d)
D. (d) and (a)

ugcnetcse-dec2019-paper2

Answer key

## 35.0.385 UGC NET CSE | December 2019 | Part 2 | Question: 5 top

Let $P$ be the set of all people. Let $R$ be a binary relation on $P$ such that $(a, b)$ is in $R$ if $a$ is a brother of $b$. Is $R$ symmetric transitive, an equivalence relation, a partial order relation?

A. $\mathrm{NO, NO, NO, NO}$
B. $\mathrm{NO, NO, YES, NO}$
C. $\mathrm{NO, YES, NO, NO}$
D. $\mathrm{NO, YES, YES, NO}$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.386 UGC NET CSE | December 2019 | Part 2 | Question: 56 top

A network with bandwidth of $10\ \mathrm{Mbps}$ can pass only an average of $12,000$ frames per minute with each frame carrying an average of $10,000$ bits. What is the throughput of this network?

A. $1,000,000\ \mathrm{bps}$
B. $2,000,000\ \mathrm{bps}$
C. $12,000,000\ \mathrm{bps}$
D. $1,200,00,000\ \mathrm{bps}$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.387 UGC NET CSE | December 2019 | Part 2 | Question: 44 top

Consider the language $L = \{a^n b^{n-3} \mid n > 2\}$ on $\Sigma = \{a, b\}$. Which one of the following grammars generates the language $L$?

A. $S \rightarrow aA \mid a, A \rightarrow aAb \mid b$
B. $S \rightarrow aaA \mid \lambda, A \rightarrow aAb \mid \lambda$
C. $S \rightarrow aaaA \mid a, A \rightarrow aAb \mid \lambda$
D. $S \rightarrow aaaA, A \rightarrow aAb \mid \lambda$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.388 UGC NET CSE | December 2019 | Part 2 | Question: 43 top

Consider the following grammars:

$G_1 : S \rightarrow aSb \mid bSa \mid aa$

$G_2 : S \rightarrow aSb \mid bSa \mid SS \mid \lambda$

$G_3 : S \rightarrow aSb \mid bSa \mid SS \mid a$

$G_4 : S \rightarrow aSb \mid bSa \mid SS \mid SSS \mid \lambda$

Which of the following is correct w.r.t. the above grammars?

A. $G_1$ and $G_3$ are equivalent
B. $G_2$ and $G_3$ are equivalent
C. $G_2$ and $G_4$ are equivalent
D. $G_3$ and $G_4$ are equivalent

ugcnetcse-dec2019-paper2

Answer key

## 35.0.389 UGC NET CSE | December 2019 | Part 2 | Question: 45 top

Consider the following grammar:

- $S \rightarrow 0A \mid 0BB$
- $A \rightarrow 00A \mid \lambda$
- $B \rightarrow 1B \mid 11C$
- $C \rightarrow B$

Which language does this grammar generate?

A. $L((00)^*0 + (11)^*1)$
B. $L(0(11)^* + 1(00)^*)$
C. $L((00)^*0)$
D. $L(0(11)^*1)$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.390 UGC NET CSE | December 2019 | Part 2 | Question: 47 top

Consider the following statements with respect to the language $L = \{a^n b^n \mid n \geq 0\}$

$S_1$ : $L^2$ is a context free language

$S_2$ : $L^k$ is context free language for any given $k \geq 1$

$S_3$ : $\overline{L}$ and $L^*$ are context free languages

Which one of the following is correct?

A. only $S_1$ and $S_2$
B. only $S_1$ and $S_3$
C. only $S_2$ and $S_3$
D. $S_1$, $S_2$ and $S_3$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.391 UGC NET CSE | December 2019 | Part 2 | Question: 41 top

When using Dijkstra's algorithm to find shortest path in a graph, which of the following statement is not true?

A. It can find shortest path within the same graph data structure
B. Every time a new node is visited, we choose the node with smallest known distance/ cost (weight) to visit first
C. Shortest path always passes through least number of vertices
D. The graph needs to have a non-negative weight on every edge

ugcnetcse-dec2019-paper2

Answer key

## 35.0.392 UGC NET CSE | December 2019 | Part 2 | Question: 40 top

Consider a weighted directed graph. The current shortest distance from source $S$ to node $x$ is represented by $d[x]$. Let $d[v] = 29$, $d[u] = 15$, $w[u, v] = 12$. What is the updated value of $d[v]$ based on current information?

A. $29$
B. $27$
C. $25$
D. $17$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.393 UGC NET CSE | December 2019 | Part 2 | Question: 49 top

Let $G=(V,T,S,P)$ be any context-free grammar without any $\lambda$-productions or unit productions. Let $K$ be the maximum number of symbols on the right of any production in $P$. The maximum number of production rules for any equivalent grammar in Chomsky normal form is given by:

A. $(K-1)\mid P\mid+\mid T\mid-1$
B. $(K-1)\mid P\mid+\mid T\mid$
C. $K\mid P\mid+\mid T\mid-1$
D. $K\mid P\mid+\mid T\mid$

Where $|\cdot|$ denotes the cardinality of the set.

ugcnetcse-dec2019-paper2

Answer key

## 35.0.394 UGC NET CSE | December 2019 | Part 2 | Question: 39 top

Give asymptotic upper and lower bound for $T(n)$ given below. Assume $T(n)$ is constant for $n\leq 2$.
$T(n)=4T(\sqrt{n})+\lg^2 n$

A. $T(n)=\theta(\lg(\lg^2 n)\lg n)$
B. $T(n)=\theta(\lg^2 n\lg n)$
C. $T(n)=\theta(\lg^2 n\lg\lg n)$
D. $T(n)=\theta(\lg(\lg n)\lg n)$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.395 UGC NET CSE | December 2019 | Part 2 | Question: 54 top

Consider a subnet with $720$ routers. If a three-level hierarchy is chosen, with eight clusters, each containing $9$ regions of $10$ routers, then total number of entries in hierarchical table of each router is

A. $25$
B. $27$
C. $53$
D. $72$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.396 UGC NET CSE | December 2019 | Part 2 | Question: 37 top

What is the worst case running time of Insert and Extract-min, in an implementation of a priority queue using an unsorted array? Assume that all the insertions can be accomodated.

A. $\theta(1),\theta(n)$
B. $\theta(n),\theta(1)$
C. $\theta(1),\theta(1)$
D. $\theta(n),\theta(n)$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.397 UGC NET CSE | December 2019 | Part 2 | Question: 70 top

Consider the following statements with respect to approaches to fill area on raster systems:

$P$: To determine the overlap intervals for scan lines that cross the area

$Q$: To start from a given interior position and pain outward from this point until we encounter the specified boundary conditions.

Select the correct answer from the options given below:

A. $P$ only
B. $Q$ only
C. Both $P$ and $Q$
D. Neither $P$ nor $Q$

ugcnetcse-dec2019-paper2

## 35.0.398 UGC NET CSE | December 2019 | Part 2 | Question: 50 top

Consider the following language families:

$L_1 \equiv$ The context-free languages
$L_2 \equiv$ The context-sensitive languages
$L_3 \equiv$ The recursively enumerable languages
$L_4 \equiv$ The recursive languages
Which one of the following options is correct?

A. $L_1 \subseteq L_2 \subseteq L_3 \subseteq L_4$
B. $L_2 \subseteq L_1 \subseteq L_3 \subseteq L_4$
C. $L_1 \subseteq L_2 \subseteq L_4 \subseteq L_3$
D. $L_2 \subseteq L_1 \subseteq L_4 \subseteq L_3$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.399 UGC NET CSE | December 2019 | Part 2 | Question: 51 top

Consider the following statements:

$S_1$: These exists no algorithm for deciding if any two Turing machines $M_1$ and $M_2$ accept the same language

$S_2$: Let $M_1$ and $M_2$ be arbitrary Turing machines. The problem to determine $L(M_1) \subseteq L(M_2)$ is undecidable

Which of the statements is (are) correct?

A. Only $S_1$
B. Only $S_2$
C. Both $S_1$ and $S_2$
D. Neither $S_1$ nor $S_2$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.400 UGC NET CSE | December 2019 | Part 2 | Question: 52 top

Let $A = \{001, 0011, 11, 101\}$ and $B = \{01, 111, 111, 010\}$. Similarly, let $C = \{00, 001, 1000\}$ and $D = \{0, 11, 011\}$.

Which of the following pairs have a post-correspondence solution?

A. Only pair $(A, B)$
B. Only pair $(C, D)$
C. Both $(A, B)$ and $(C, D)$
D. Neither $(A, B)$ nor $(C, D)$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.401 UGC NET CSE | December 2019 | Part 2 | Question: 53 top

Which of the following class of $\mathrm{IP}$ address has the last address as $223.255.255.255$?

A. Class $A$
B. Class $B$
C. Class $C$
D. Class $D$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.402 UGC NET CSE | December 2019 | Part 2 | Question: 46 top

Consider $\sum = \{w, x\}$ and $T = \{x, y, z\}$. Define homomorphism $h$ by:

$$h(x) = xyz$$

$$h(w) = zxyy$$

If $L$ is the regular language denoted by $r = (w + x^*)(ww)^*$, then the regular language $h(L)$ is given by

A. $(z\,x\,yy + x\,z\,y)(z\,x\,yy)$
B. $(zxyy + (xzy)^*)\,(zxyy\,zxyy)$
C. $(zxyy + xzy)(zxyy)^*$
D. $(zxyy + (xzy)^*)\,(zxyy\,zxyy)$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.403 UGC NET CSE | December 2005 | Part 2 | Question: 1 top

$T$ is a graph with n vertices. $T$ is connected and has exactly $n-1$ edges, then :

A. $T$ is a tree
B. $T$ contains no cycles
C. Every pairs of vertices in $T$ is connected by exactly one path
D. All of these

ugcnetcse-dec2005-paper2

Answer key

## 35.0.404 UGC NET CSE | December 2019 | Part 1 | Question: 46 top

Read the passage carefully and answer questions that follow:

There is no doubt that the market as a reality and political economy as a theory played an important role in the liberal critique. But liberalism is neither the consequence nor the development of these; rather, the market played, in the liberal critique, the role of a "test, a locus of privileged experience where one can identify the effects of excessive governmentality and even weigh their significance; the analysis of the mechanisms of "dearth" or more generally, of the grain trade in the middle of the eighteenth century, was meant to show the point at which governing was always governing too much. Therefore, an analysis to make visible, in the form of evidence, the formation of the value and circulation of wealth – or, on the contrary, an analysis pre-supposing the intrinsic invisibility of the connection between individual profit-seeking and the growth of collective wealth-economics, in any case, shows a basic incompatibility between the optimal development of the economic process and maximisation of government procedures. It is by this, more than the play of ideas, the French or English economists broke away from mercantilism and commercialism; they freed reflection on economic practice from the hegemony of the "reason of state" and from the saturation of governmental intervention. By using it as a measure of "governing too much", they placed it at the limit of governmental action. Liberalism does not derive from juridical thought any more than it does from an economic analysis. It is not the idea of a political society, but the result of search for a liberal technology of a government.

Which of the following played a role in the liberal critique?

A. Liberalism as a consequence of market forces
B. Liberalism as an offshoot of political economy
C. Reality of market
D. Political economy as a practice

ugcnetcse-dec2019-paper1

## 35.0.405 UGC NET CSE | December 2019 | Part 1 | Question: 48 top

Read the passage carefully and answer questions that follow:

There is no doubt that the market as a reality and political economy as a theory played an important role in the liberal critique. But liberalism is neither the consequence nor the development of these; rather, the market played, in the liberal critique, the role of a "test, a locus of privileged experience where one can identify the effects of excessive governmentality and even weigh their significance; the analysis of the mechanisms of "dearth" or more generally, of the grain trade in the middle of the eighteenth century, was meant to show the point at which governing was always governing too much. Therefore, an analysis to make visible, in the form of evidence, the formation of the value and circulation of wealth – or, on the contrary, an analysis pre-supposing the intrinsic invisibility of the connection between individual profit-seeking and the growth of collective wealth-economics, in any case, shows a basic incompatibility between the optimal development of the economic process and maximisation of government procedures. It is by this, more than the play of ideas, the French or English economists broke away from mercantilism and commercialism; they freed reflection on economic practice from the hegemony of the "reason of state" and from the saturation of governmental intervention. By using it as a measure of "governing too much", they placed it at the limit of governmental action. Liberalism does not derive from juridical thought any more than it does from an economic analysis. It is not the idea of a political society, but the result of search for a liberal technology of a government.

What kind of evidence was needed to make the liberal critique visible?

A. Circulation of wealth
B. Pre-supposing individual profit
C. Dearth in supply of grain
D. Incompatibility of growth

ugcnetcse-dec2019-paper1

## 35.0.406 UGC NET CSE | December 2019 | Part 2 | Question: 65 top

Let the population of chromosomes in genetic algorithm is represented in terms of binary number. The strength of fitness of a chromosome in decimal form, $x$, is given by

$Sf(x) = \frac{f(x)}{\Sigma f(x)}$ where $f(x) = x^2$

The population is given by $P$ where:

$P = \{(01101, (11000), (01000), (10011)\}$

The strength of fitness of chromosome $(11000)$ is _____

A. $24$ B. $576$ C. $14.4$ D. $49.2$

ugcnetcse-dec2019-paper2

## 35.0.407 UGC NET CSE | December 2019 | Part 2 | Question: 71 top

Which of the following statements are true regarding $\mathrm{C++}$?

a. Overloading gives the capability to an existing operator to operate on other data types
b. Inheritance in object oriented programming provides support to reusability
c. When object of a derived class is defined, first the constructor of derived class is excecuted then constructor of a base class is executed
d. Overloading is a type of polymorphism

Choose the correct option from those given below:

A. (a) and (b) only
B. (a), (b) and (c) only
C. (a), (b) and (d) only
D. (b), (c) and (d) only

ugcnetcse-dec2019-paper2

Answer key

## 35.0.408 UGC NET CSE | December 2019 | Part 2 | Question: 16 top

Which tag is used to enclose any number of javascript statements in HTML document?

A. <code>
B. <script>
C. <title>
D. <body>

ugcnetcse-dec2019-paper2

Answer key

## 35.0.409 UGC NET CSE | December 2019 | Part 2 | Question: 7 top

A tree has $2n$ vertices of degree $1$, $3n$ vertices of degree $2$, $n$ vertices of degree $3$. Determine the number of vertices and edges in tree.

A. $12, 11$ B. $11, 12$ C. $10, 11$ D. $9, 10$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.410 UGC NET CSE | December 2019 | Part 2 | Question: 4 top

What are the greatest lower bound $(\mathrm{GLB})$ and the least upper bound $(\mathrm{LUB})$ of the sets $A = \{3, 9, 12\}$ and $B = \{1, 2, 4, 5, 10\}$ if they exist in poset $(z^+, /)$?

A. $\mathrm{A}(\mathrm{GLB} - 3, \mathrm{LUB} - 36); \mathrm{B}(\mathrm{GLB} - 1, \mathrm{LUB} - 20)$
B. $\mathrm{A}(\mathrm{GLB} - 3, \mathrm{LUB} - 12); \mathrm{B}(\mathrm{GLB} - 1, \mathrm{LUB} - 10)$
C. $\mathrm{A}(\mathrm{GLB} - 1, \mathrm{LUB} - 36); \mathrm{B}(\mathrm{GLB} - 2, \mathrm{LUB} - 20)$
D. $\mathrm{A}(\mathrm{GLB} - 1, \mathrm{LUB} - 12); \mathrm{B}(\mathrm{GLB} - 2, \mathrm{LUB} - 10)$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.411 UGC NET CSE | December 2019 | Part 2 | Question: 24 top

A counting semaphore is initialized to $8$. $3$ wait ( ) operations and $4$ signal ( ) operations are applied. Find the current value of semaphore variable.

A. $9$ B. $5$ C. $1$ D. $4$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.412 UGC NET CSE | December 2019 | Part 2 | Question: 31 top

Which of the following methods are used to pass any number of parameters to the operating system through system calls?

A. Registers
B. Block or table in main memory
C. Stack
D. Block in main memory and stack

ugcnetcse-dec2019-paper2

Answer key

## 35.0.413 UGC NET CSE | December 2019 | Part 2 | Question: 30 top

Given $\text{CPU}$ time slice of $2\text{ms}$ and following list of processes.

| Process | Burst time (ms) | Arrival time |
|---|---|---|
| $p_1$ | $3$ | $0$ |
| $p_2$ | $4$ | $2$ |
| $p_3$ | $5$ | $5$ |

Find average turnaround time and average waiting time using round robin $\text{CPU}$ scheduling?

A. $4,0$ B. $5.66,1.66$ C. $5.66,0$ D. $7,2$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.414 UGC NET CSE | December 2019 | Part 2 | Question: 29 top

Which of the following interprocess communication model is used to exchange messages among co-operative processes?

A. Shared memory model
B. Message passing model
C. Shared memory and message passing model
D. Queues

ugcnetcse-dec2019-paper2

Answer key

## 35.0.415 UGC NET CSE | December 2019 | Part 2 | Question: 18 top

Which of the following algorithms is <u>not</u> used for line clipping?

A. Cohen-Sutherland algorithm
B. Sutherland-Hodgeman algorithm
C. Liang-Barsky algorithm
D. Nicholl-Lee-Nicholl algorithm

ugcnetcse-dec2019-paper2

## 35.0.416 UGC NET CSE | December 2019 | Part 2 | Question: 26 top

Which of the following $\text{CPU}$ scheduling algorithms is/are supported by $\text{LINUX}$ operating system?

A. Non-preemptive priority scheduling
B. Preemptive priority scheduling and time sharing $\text{CPU}$ scheduling
C. Time sharing scheduling only
D. Priority scheduling only

ugcnetcse-dec2019-paper2

Answer key

## 35.0.417 UGC NET CSE | December 2005 | Part 2 | Question: 31 top

The Register or main memory location which contains the effective address of the operand is known as:

A. Pointer
B. Indexed register
C. Special Locations
D. Scratch Pad

ugcnetcse-dec2005-paper2

Answer key

## 35.0.418 UGC NET CSE | December 2019 | Part 2 | Question: 25 top

Which of the following is not needed by an encryption algorithm used in Cryptography?

A. $\mathrm{KEY}$
B. Message
C. Ciphertext
D. User details

ugcnetcse-dec2019-paper2

Answer key

## 35.0.419 UGC NET CSE | December 2019 | Part 2 | Question: 21 top

Given two tables $R1(x, y)$ and $R2(y, z)$ with $50$ and $30$ number of tuples respectively. Find maximum number of tuples in the output of natural join between tables $R1$ and $R2$ i.e. $R1 * R2$? ($*$- Natural Join)

A. $30$
B. $20$
C. $50$
D. $1500$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.420 UGC NET CSE | December 2019 | Part 2 | Question: 33 top

In a system for a restaurant, the main scenario for placing order is given below:

a. Customer reads menu
b. Customer places order
c. Order is sent to kitchen for preparation
d. Order items are served
e. Customer requests for a bill
f. Bill is prepared for the order
g. Customer is given the bill
h. Customer pays the bill

A sequence diagram for the scenario will have at least how many objects among whom the messages will be exchanged

A. $3$
B. $4$
C. $5$
D. $6$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.421 UGC NET CSE | December 2019 | Part 2 | Question: 20 top

Which of the component module of $\mathrm{DBMS}$ does rearrangement and possible ordering of operations, eliminate redundancy in query and use efficient algorithms and indexes during the execution of a query?

A. query compiler
B. query optimizer
C. Stored data manager
D. Database processor

ugcnetcse-dec2019-paper2

Answer key

## 35.0.422 UGC NET CSE | December 2019 | Part 2 | Question: 19 top

If we want to resize a $1024 \times 768$ pixels image to one that is $640$ pixels wide with the same aspect ratio, what would be the height of the resized image?

A. $420$ Pixels
B. $460$ Pixels
C. $480$ Pixels
D. $540$ Pixels

ugcnetcse-dec2019-paper2

Answer key

## 35.0.423 UGC NET CSE | December 2019 | Part 2 | Question: 72 top

Which of the following are legal statements in $C$ programming language?

| a. | b. | c. | d. |
|---|---|---|---|
| int *P=&44; | int *P=&r; | int P=&a; | int P=a; |

Choose the correct option:

A. (a) and (b)
B. (b) and (c)
C. (b) and (d)
D. (a) and (d)

ugcnetcse-dec2019-paper2

Answer key

## 35.0.424 UGC NET CSE | December 2019 | Part 2 | Question: 74 top

Identify the circumstances under which pre-emptive $\mathrm{CPU}$ scheduling is used:

a. A process switches from Running state to Ready state
b. A process switches from Waiting state to Ready state
c. A process completes its execution
d. A process switches from Ready to Waiting state

Choose the correct option:

A. (a) and (b) only
B. (a) and (d) only
C. (c) and (d) only
D. (a), (b), (c) only

ugcnetcse-dec2019-paper2

Answer key

## 35.0.425 UGC NET CSE | December 2019 | Part 1 | Question: 45 top

Rashtriya Uchhatar Shiksha Abhiyan $(\mathrm{RUSA})$ aims to achieve the following in Higher Education System:

a. Equity
b. Access
c. $50\%$ $\mathrm{GER}$
d. Excellence

Choose the correct option from those given below:

A. a, b and c
B. a, c and d
C. a, b and d
D. b, c and d

ugcnetcse-dec2019-paper1

## 35.0.426 UGC NET CSE | December 2019 | Part 1 | Question: 20 top

What is the exact equivalent discount of three successive discounts of $10\%$, $15\%$ and $20\%$ by sale of an article?

A. $35.8\%$
B. $38.5\%$
C. $35.5\%$
D. $38.8\%$

ugcnetcse-dec2019-paper1

## 35.0.427 UGC NET CSE | December 2019 | Part 1 | Question: 26 top

The following table gives the percentage of marks obtained by $6$ students in $5$ different subjects in an examination. The numbers in the parenthesis give the maximum marks in each subject. Answer the given questions based on the table:

| Subject (Max. Marks) / Name of student | Percentage (%) of marks obtained | | | | |
|---|---|---|---|---|---|
| | Maths (150) | Chemistry (130) | Physics (120) | Biology (100) | English (100) |
| Ankit | 90 | 50 | 80 | 60 | 70 |
| Amar | 100 | 60 | 70 | 40 | 80 |
| Sanya | 90 | 60 | 85 | 80 | 60 |
| Rahul | 80 | 75 | 65 | 90 | 90 |
| Puneet | 80 | 80 | 70 | 85 | 50 |
| Pooja | 70 | 75 | 50 | 80 | 40 |

What is the overall percentage of marks obtained by Amar?

A. $70\%$
B. $72\%$
C. $60\%$
D. $58.33\%$

ugcnetcse-dec2019-paper1

Answer key

## 35.0.428 UGC NET CSE | December 2019 | Part 2 | Question: 32 top

Java Virtual Machine $(\mathrm{JVM})$ is used to execute architectural neutral byte code. Which of the following is needed by the $\mathrm{JVM}$ for execution of Java Code?

A. Class loader only
B. Class loader and Java Interpreter
C. Class loader, Java Interpreter and $\mathrm{API}$
D. Java Interpreter only

ugcnetcse-dec2019-paper2

Answer key

## 35.0.429 UGC NET CSE | December 2019 | Part 2 | Question: 27 top

Consider a paging system where translation look aside buffer (TLB) a special type of associative memory is used with hit ratio of $80\%$.

Assume that memory reference takes $80$ nanoseconds and reference time to TLB is $20$ nanoseconds. What will be the effective memory access time given $80\%$ hit ratio?

A. $110$ nanoseconds
B. $116$ nanoseconds
C. $200$ nanoseconds
D. $100$ nanoseconds

ugcnetcse-dec2019-paper2

Answer key

## 35.0.430 UGC NET CSE | December 2019 | Part 2 | Question: 34 top

An _____ chart is a project schedule representation that presents project plan as a directed graph. The critical path is the _____ sequence of _____ tasks and it defines project _____.

A. Activity, Shortest, Independent, Cost
B. Activity, Longest, Dependent, Duration
C. Activity, Longest, Independent, Duration
D. Activity, Shortest, Dependent, Duration

ugcnetcse-dec2019-paper2

Answer key

## 35.0.431 UGC NET CSE | December 2019 | Part 2 | Question: 35 top

Let $a^{2c} \bmod n = (a^c)^2 \bmod n$ and $a^{2c+1} \bmod n = a \cdot (a^c)^2 \bmod n$. For $a = 7,\ b = 17$ and $n = 561$, What is the value of $a^b (\bmod n)$?

A. $160$
B. $166$
C. $157$
D. $67$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.432 UGC NET CSE | December 2019 | Part 2 | Question: 2 top

Consider the following Linear programming problem $(\mathrm{LPP})$:

Maximize $z = x_1 + x_2$

Subject to the constraints:

$x_1 + 2x_2 \leq 2000$
$x_1 + x_2 \leq 1500$
$x_2 \leq 600$
and $x_1, x_2 \geq 0$

The solution of the above $\mathrm{LPP}$ is

A. $x_1 = 750, x_2 = 750, z = 1500$
B. $x_1 = 500, x_2 = 1000, z = 1500$
C. $x_1 = 1000, x_2 = 500, z = 1500$
D. $x_1 = 900, x_2 = 600, z = 1500$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.433 UGC NET CSE | December 2019 | Part 2 | Question: 1 top

A basic feasible solution of an $m \times n$ transportation problem is said to be non-degenerate, if basic feasible solution contains exactly _____ number of individual allocation in _____ positions.

A. $m+n+1$, independent
B. $m+n-1$, independent
C. $m+n-1$, appropriate
D. $m-n+1$, independent

ugcnetcse-dec2019-paper2

Answer key

## 35.0.434 UGC NET CSE | December 2019 | Part 2 | Question: 15 top

Let $A$ be the base class in $\mathrm{C++}$ and $B$ be the derived class from $A$ with protected inheritance. Which of the following statement is false for class $B$?

A. Member function of class $B$ can access protected data of class $A$
B. Member function of class $B$ can access public data of class $A$
C. Member function of class $B$ cannot access private data of class $A$
D. Object of derived class $B$ can access public base class data

ugcnetcse-dec2019-paper2

Answer key

## 35.0.435 UGC NET CSE | December 2019 | Part 2 | Question: 17 top

A rectangle is bound by the lines $x=0; y=0; x=5$ and $y=3$. The line segment joining $(-1,0)$ and $(4,5)$, if clipped against this window will connect the points _____.

A. $(0,1)$ and $(3,3)$
B. $(0,1)$ and $(2,3)$
C. $(0,1)$ and $(4,5)$
D. $(0,1)$ and $(3,5)$

ugcnetcse-dec2019-paper2

Answer key

## 35.0.436 UGC NET CSE | December 2019 | Part 2 | Question: 55 top

Piconet is a basic unit of a bluetooth system consisting of _____ master node and up to _____ active slave nodes.

A. one, five
B. one, seven
C. two, eight
D. one, eight

ugcnetcse-dec2019-paper2

Answer key

## 35.0.437 UGC NET CSE | December 2019 | Part 2 | Question: 28 top

Suppose a system has $12$ magnetic tape drives and at time $t_0$, three processes are allotted tape drives out of their need as given below:

| | Maximum Needs | Current Needs |
|---|---|---|
| $p_0$ | $10$ | $5$ |
| $p_1$ | $4$ | $2$ |
| $p_2$ | $9$ | $2$ |

At time $t_0$, the system is in safe state. Which of the following is safe sequence so that deadlock is avoided?

A. $\langle p_0, p_1, p_2 \rangle$
B. $\langle p_1, p_0, p_2 \rangle$
C. $\langle p_2, p_1, p_0 \rangle$
D. $\langle p_0, p_2, p_1 \rangle$

ugcnetcse-dec2019-paper2

### 35.0.438 UGC NET CSE | December 2004 | Part 2 | Question: 48 top

The cost of a parallel processing is primarily determined by :

A. Time complexity
B. Switching complexity
C. Circuit complexity
D. None of the above

ugcnetcse-dec2004-paper2

Answer key

## 35.1 Acid Properties (1) top

### 35.1.1 Acid Properties: UGC NET CSE | December 2009 | Part 2 | Question: 45 top

The name of the transaction file shall be provided by the operator and the file that contains the edited transactions ready for execution shall be called

(A) Batch. Exe

(B) Trans. Exe

(C) Opt. Exe

(D) Edit.Exe

ugcnetcse-dec2009-paper2 databases acid-properties

## 35.2 Artificial Intelligence (1) top

### 35.2.1 Artificial Intelligence: UGC NET CSE | August 2016 | Part 3 | Question: 71 top

Match each Artificial Intelligence term in List-I that best describes a given situation in List-II :

| | List-I | | List-II |
|---|---|---|---|
| I. | Semantic Network | a. | Knowledge about what to do as opposed to how to do it |
| II. | Frame | b. | A premise of rule that is not concluded by any rule |
| III. | Declarative Knowledge | c. | A method of knowledge representation that uses a graph |
| IV. | Primitive | d. | A data structure representing stereotypical knowledge |

**Codes :**

A. I-d, II-a, III-b, IV-c
B. I-d, II-c, III-a, IV-b
C. I-d, II-c, III-b, IV-a
D. I-c, II-d, III-a, IV-b

ugcnetcse-aug2016-paper3 artificial-intelligence

Answer key

## 35.3 Assembly (1) top

### 35.3.1 Assembly: UGC NET CSE | June 2011 | Part 2 | Question: 34 top

In which way(s) a macroprocessor for assembly language can be implemented?

A. Independent two-pass processor
B. Independent one-pass processor
C. Expand macrocalls and substitute arguments
D. All of the above

ugcnetcse-june2011-paper2 co-and-architecture microprocessors assembly

Answer key

## 35.4 Binary Codes (1) top

### 35.4.1 Binary Codes: UGC NET CSE | January 2017 | Part 3 | Question: 65 top

A t-error correcting q-nary linear code satisfy :

$M \sum_{i=0}^{t} (\frac{n}{i})(q-1)^i \leq X$

Where M is the number of code words and X is

A. $q^n$ B. $q^t$ C. $q^{-n}$ D. $q^{-t}$

ugcnetcse-jan2017-paper3 binary-codes

Answer key

## 35.5 Binary Tree (1) top

### 35.5.1 Binary Tree: UGC NET CSE | June 2011 | Part 2 | Question: 22 top

Given a binary tree whose inorder and preorder traversal are given by

Inorder : EICFBGDJHK

Preorder : BCEIFDGHJK

The post order traversal of the above binary tree is

A. I E F C G J K H D B
B. I E F C J G K H D B
C. I E F C G K J H D B
D. I E F C G J K D B H

ugcnetcse-june2011-paper2 algorithms binary-tree

Answer key

## 35.6 Boolean Algebra (1) top

### 35.6.1 Boolean Algebra: UGC NET CSE | December 2019 | Part 2 | Question: 3 top

The Boolean expression $AB + A\overline{B} + \overline{A}C + AC$ is unaffected by the value of the Boolean variable _____.

A. $A$ B. $B$ C. $C$ D. $A, B$ and $C$

ugcnetcse-dec2019-paper2 digital-logic boolean-algebra

Answer key

## 35.7 Compilation Phases (1) top

### 35.7.1 Compilation Phases: UGC NET CSE | December 2010 | Part 2 | Question: 33 top

Grammar of the programming is checked at _____ phase of compiler.

A. Semantic analysis
B. Code generation
C. Syntax analysis
D. Code optimization

ugcnetcse-dec2010-paper2 compiler-design compilation-phases

Answer key

## 35.8 Crypt Arithmetic (1) top

### 35.8.1 Crypt Arithmetic: UGC NET CSE | September 2013 | Part 3 | Question: 3 top

Assume that each alphabet can have a value between 0 to 9 in a cryptoarithmetic problem

```
 CROSS
+ROADS
------
DANGER
```

Which of the following statements is true?

I. No two alphabets can have the same numeric value
II. Any two alphabets can have the same numeric value
III. D=0
IV. D=1

A. I and III B. I and IV C. II and III D. II and IV

ugcnetcse-sep2013-paper3 cryptography crypt-arithmetic

Answer key

## 35.9 Data Compression (1) top

### 35.9.1 Data Compression: UGC NET CSE | Junet 2015 | Part 3 | Question: 65 top

The redundancy in images stems from

A. pixel decolleration
B. pixel colleration
C. pixel quantization
D. image size

ugcnetcse-june2015-paper3 data-compression digital-image-processing

Answer key

## 35.10 Data Flow Diagram (1) top

### 35.10.1 Data Flow Diagram: UGC NET CSE | June 2011 | Part 2 | Question: 43 top

By means of a data flow diagram, the analyst can detect

A. Task duplication
B. Unnecessary delays
C. Task overlapping
D. All of the above

ugcnetcse-june2011-paper2 is&software-engineering data-flow-diagram

## 35.11 Data Mart (1) top

### 35.11.1 Data Mart: UGC NET CSE | December 2010 | Part 2 | Question: 46 top

A data mart may contain

A. Summarised data
B. De-normalized data
C. Aggregate departmental data
D. All of the above

ugcnetcse-dec2010-paper2 data-warehousing data-mart

Answer key

## 35.12 Data Mining (4) top

### 35.12.1 Data Mining: UGC NET CSE | August 2016 | Part 2 | Question: 48 top

In Data mining, classification rules are extracted from _____.

A. Data B. Information C. Decision Tree D. Database

ugcnetcse-aug2016-paper2 data-mining

Answer key

### 35.12.2 Data Mining: UGC NET CSE | August 2016 | Part 2 | Question: 50 top

In Data mining, _____ is a method of incremental conceptual clustering.

A. STRING B. COBWEB C. CORBA D. OLAD

ugcnetcse-aug2016-paper2 data-mining

Answer key

### 35.12.3 Data Mining: UGC NET CSE | December 2010 | Part 2 | Question: 47 top

Data mining is

A. The process of extracting valid, previously unknown, comprehensible and actionable information from large databases and using it to make crucial business decisions.
B. A tool that allows end users direct access and manipulation of data from within datawarehousing environment without the intervention of customised programming activity.
C. A tool that helps end users extract useful business information from large database.

D. All of the above

ugcnetcse-dec2010-paper2 databases data-mining

Answer key

### 35.12.4 Data Mining: UGC NET CSE | December 2011 | Part 2 | Question: 47 top

Web Mining is not used in which of the following areas ?

A. Information filtering
B. Crime fighting on the internet
C. Online transaction processing
D. Click stream analysis.

ugcnetcse-dec2011-paper2 data-mining

Answer key

## 35.13 Data Warehousing (2) top

### 35.13.1 Data Warehousing: UGC NET CSE | August 2016 | Part 2 | Question: 47 top

_____ is subject oriented, integrated, time variant, nonvolatile collection of data in support of management decisions.

A. Data mining
B. Web mining
C. Data warehouse
D. Database Management System

ugcnetcse-aug2016-paper2 data-warehousing

Answer key

### 35.13.2 Data Warehousing: UGC NET CSE | June 2011 | Part 2 | Question: 46 top

Data warehousing refers to

A. Storing data offline at a separate site
B. Backing up data regularly
C. Is related to data mining
D. Uses tape as opposed to disk

ugcnetcse-june2011-paper2 data-warehousing

Answer key

## 35.14 Decomposition (1) top

### 35.14.1 Decomposition: UGC NET CSE | June 2011 | Part 2 | Question: 20 top

Decomposition help in eliminating some of the problems of bad design

A. Redundancy
B. Inconsistencies
C. Anomalies
D. All of the above

ugcnetcse-june2011-paper2 databases decomposition

Answer key

## 35.15 Digital Image Processing (3) top

### 35.15.1 Digital Image Processing: UGC NET CSE | August 2016 | Part 3 | Question: 60 top

If the histogram of an image is clustered towards origin on X-axis of a histogram plot then it indicates that the image is _____.

A. Dark
B. Good contrast
C. Bright
D. Very low contrast

ugcnetcse-aug2016-paper3 digital-image-processing

Answer key

### 35.15.2 Digital Image Processing: UGC NET CSE | December 2013 | Part 3 | Question: 31 top

Consider the formula in image processing $R_D = 1 - \frac{1}{C_R}$ where $C_R = \frac{n_1}{n_2}$. $C_R$ is called as compression ratio $n_1$ and $n_2$ denotes the number of information carrying units in two datasets that represent the same information. In this situation $R_D$ is called as relative ____ of the first data set.

A. Data Compression
B. Data Redundancy
C. Data Relation
D. Data Representation

ugcnetcse-dec2013-paper3 digital-image-processing

Answer key

### 35.15.3 Digital Image Processing: UGC NET CSE | June 2012 | Part 3 | Question: 22 top

The transform which possess the highest ‘energy compaction’ property is

A. Slant transform
B. Cosine transform
C. Fourier transform
D. Karhunen-Loeve transform

ugcnetcse-june2012-paper3 digital-image-processing

Answer key

## 35.16 Disk (1) top

### 35.16.1 Disk: UGC NET CSE | June 2011 | Part 2 | Question: 36 top

Block or Buffer caches are used to

A. Improve disk performance
B. Handle interrupts
C. Increase the capacity of main memory
D. Speed up main memory Read operations

ugcnetcse-june2011-paper2 operating-system disk

Answer key

## 35.17 Disk Scheduling (1) top

### 35.17.1 Disk Scheduling: UGC NET CSE | June 2011 | Part 2 | Question: 23 top

The number of disk accesses performed by insertion operation in B-tree of height $h$ is

A. $0(1)$
B. $0(1gh)$
C. $0(h)$
D. None of these

ugcnetcse-june2011-paper2 operating-system disk-scheduling

Answer key

## 35.18 Duality (1) top

### 35.18.1 Duality: UGC NET CSE | August 2016 | Part 3 | Question: 62 top

Consider the following statements :

(a) If primal (dual) problem has a finite optimal solution, then its dual (primal) problem has a finite optimal solution.

(b) If primal (dual) problem has an unbounded optimum solution, then its dual (primal) has no feasible solution at all.

(c) Both primal and dual problems may be infeasible. Which of the following is correct ?

A. (a) and (b) only
B. (a) and (c) only
C. (b) and (c) only
D. (a), (b) and (c)

ugcnetcse-aug2016-paper3 linear-programming duality

Answer key

## 35.19 E Commerce (2) top

### 35.19.1 E Commerce: UGC NET CSE | August 2016 | Part 2 | Question: 49 top

Discovery of cross sales opportunities is called as _____.

A. Association
B. Visualization
C. Correlation
D. Segmentation

ugcnetcse-aug2016-paper2 e-technologies e-commerce

Answer key

### 35.19.2 E Commerce: UGC NET CSE | June 2011 | Part 2 | Question: 50 top

Which is the most valuable electronic commerce to the individual customer in long run ?

A. Business to Customer
B. Business to Business
C. Customer to Customer
D. None of the above

ugcnetcse-june2011-paper2 e-technologies e-commerce

Answer key

## 35.20 E Payment (1) top

### 35.20.1 E Payment: UGC NET CSE | June 2011 | Part 2 | Question: 49 top

The principal electronic payment systems for electronic commerce is

A. Credit Card
B. Digital Wallet
C. Electronic Cheque
D. All of the above

ugcnetcse-june2011-paper2 e-technologies e-payment

Answer key

## 35.21 E Technologies (3) top

### 35.21.1 E Technologies: UGC NET CSE | December 2010 | Part 2 | Question: 48 top

E-Choupal refers to

A. Calling meeting of Surpanches electronically.
B. Conducting Panchayat meeting using latest electronic gadgets.
C. Providing window of information to villagers and farmers in NIC network.
D. None of the above

ugcnetcse-dec2010-paper2 e-technologies

Answer key

### 35.21.2 E Technologies: UGC NET CSE | December 2011 | Part 2 | Question: 7 top

BCC in the internet refers to

A. Black carbon copy
B. Blind carbon copy
C. Blank carbon copy
D. Beautiful carbon copy

ugcnetcse-dec2011-paper2 e-technologies

Answer key

### 35.21.3 E Technologies: UGC NET CSE | June 2011 | Part 2 | Question: 48 top

"M-Commerce" refers to

A. A myth which does not exist in reality
B. The ability of business to reach potential customers wherever they are
C. The ability to have large capacity of memory storage dealing trade and commerce
D. None of the above

ugcnetcse-june2011-paper2 e-technologies

Answer key

## 35.22 Encryption Decryption (2) top

### 35.22.1 Encryption Decryption: UGC NET CSE | September 2013 | Part 2 | Question: 3 top

Which of the following substitution technique have the relationship between a character in the plaintext and a character in the ciphertext as one-to-many?

A. Monoalphabetic
B. Polyalphabetic

C. Transpositional
D. None of the above

ugcnetsep2013ii cryptography encryption-decryption

Answer key

### 35.22.2 Encryption Decryption: UGC NET CSE | September 2013 | Part 3 | Question: 57 top

If user A wants to send an encrypted message to user B, the plain text of A is encrypted with the

A. Public key of user A
B. Public key of user B
C. Private key of user A
D. Private key of user B

ugcnetcse-sep2013-paper3 cryptography encryption-decryption

Answer key

## 35.23 Enterprise Resource Planning (2) top

### 35.23.1 Enterprise Resource Planning: UGC NET CSE | December 2011 | Part 2 | Question: 44 top

Enterprise Resource Planning (ERP)

A. Has existed for over a decade.
B. Does not integrate well with the functional areas other than operations.
C. Is inexpensive to implement.
D. Automate and integrates the majority of business processes.

ugcnetcse-dec2011-paper2 mis enterprise-resource-planning (erp)

Answer key

### 35.23.2 Enterprise Resource Planning: UGC NET CSE | December 2011 | Part 2 | Question: 45 top

Which of the following is false concerning Enterprise Resource Planning (ERP) ?

A. It attempts to automate and integrate the majority of business processes.
B. It shares common data and practices across the enterprise.
C. It is inexpensive to implement.
D. It provides and access information in a real-time environment.

ugcnetcse-dec2011-paper2 mis enterprise-resource-planning (erp)

Answer key

## 35.24 File System (1) top

### 35.24.1 File System: UGC NET CSE | June 2011 | Part 2 | Question: 37 top

A file organization component VSAM file is

A. Relative records data set
B. Keyed sequential data set
C. Entry sequential data set
D. All of the above

ugcnetcse-june2011-paper2 operating-system file-system

Answer key

## 35.25 Fuzzy Logic (2) top

### 35.25.1 Fuzzy Logic: UGC NET CSE | August 2016 | Part 3 | Question: 64 top

What are the following sequence of steps taken in designing a fuzzy logic machine ?

A. Fuzzification $\rightarrow$ Rule evaluation $\rightarrow$ Defuzzification
B. Fuzzification $\rightarrow$ Defuzzification $\rightarrow$ Rule evaluation
C. Rule evaluation $\rightarrow$ Fuzzification $\rightarrow$ Defuzzification
D. Rule evaluation $\rightarrow$ Defuzzification $\rightarrow$ Fuzzification

ugcnetcse-aug2016-paper3 neural-network fuzzy-logic

Answer key

### 35.25.2 Fuzzy Logic: UGC NET CSE | September 2013 | Part 3 | Question: 26 top

Let A be a set of comfortable houses given as $A = \left\{\frac{x_1}{0.8}, \frac{x_2}{0.9}, \frac{x_3}{0.1}, \frac{x_4}{0.7}\right\}$ and be the set of affordable houses $B = \left\{\frac{x_1}{0.9}, \frac{x_2}{0.8}, \frac{x_3}{0.6}, \frac{x_4}{0.2}\right\}$ Then the set of comfortable and affordable houses is

A. $\left\{\frac{x_1}{0.8}, \frac{x_2}{0.8}, \frac{x_3}{0.1}, \frac{x_4}{0.2}\right\}$
B. $\left\{\frac{x_1}{0.9}, \frac{x_2}{0.9}, \frac{x_3}{0.6}, \frac{x_4}{0.7}\right\}$
C. $\left\{\frac{x_1}{0.8}, \frac{x_2}{0.8}, \frac{x_3}{0.6}, \frac{x_4}{0.7}\right\}$
D. $\left\{\frac{x_1}{0.7}, \frac{x_2}{0.7}, \frac{x_3}{0.7}, \frac{x_4}{0.9}\right\}$

ugcnetcse-sep2013-paper3 neural-network fuzzy-logic

Answer key

## 35.26 Fuzzy Relations (1) top

### 35.26.1 Fuzzy Relations: UGC NET CSE | August 2016 | Part 3 | Question: 66 top

Let R and S be two fuzzy relations defined as

$$R = \begin{array}{c} \\ x_1 \\ x_2 \end{array}\begin{array}{c} \begin{array}{cc} y_1 & y_2 \end{array} \\ \begin{bmatrix} 0.7 & 0.5 \\ 0.8 & 0.4 \end{bmatrix} \end{array}$$

and

$$S = \begin{array}{c} \\ y_1 \\ y_2 \end{array}\begin{array}{c} \begin{array}{ccc} z_1 & z_2 & z_3 \end{array} \\ \begin{bmatrix} 0.9 & 0.6 & 0.2 \\ 0.1 & 0.7 & 0.5 \end{bmatrix} \end{array}$$

Then, the resulting relation, $T$, which relates elements of universe of $X$ to elements of universe of $Z$ using max-product composition is given by

A. $$T = \begin{array}{c} \\ x_1 \\ x_2 \end{array}\begin{array}{c} \begin{array}{ccc} z_1 & z_2 & z_3 \end{array} \\ \begin{bmatrix} 0.68 & 0.89 & 0.39 \\ 0.76 & 0.72 & 0.32 \end{bmatrix} \end{array}$$

B. $$T = \begin{array}{c} \\ x_1 \\ x_2 \end{array}\begin{array}{c} \begin{array}{ccc} z_1 & z_2 & z_3 \end{array} \\ \begin{bmatrix} 0.68 & 0.89 & 0.39 \\ 0.72 & 0.76 & 0.32 \end{bmatrix} \end{array}$$

C. $$T = \begin{array}{c} \\ x_1 \\ x_2 \end{array}\begin{array}{c} \begin{array}{ccc} z_1 & z_2 & z_3 \end{array} \\ \begin{bmatrix} 0.63 & 0.42 & 0.25 \\ 0.72 & 0.48 & 0.20 \end{bmatrix} \end{array}$$

D. $$T = \begin{array}{c} \\ x_1 \\ x_2 \end{array}\begin{array}{c} \begin{array}{ccc} z_1 & z_2 & z_3 \end{array} \\ \begin{bmatrix} 0.05 & 0.35 & 0.14 \\ 0.04 & 0.28 & 0.16 \end{bmatrix} \end{array}$$

ugcnetcse-aug2016-paper3 neural-network fuzzy-relations

Answer key

## 35.27 Fuzzy Set (2) top

### 35.27.1 Fuzzy Set: UGC NET CSE | December 2013 | Part 3 | Question: 28 top

If A and B are two fuzzy sets with membership functions

$\mu_A(x) = \{0.2, 0.5, 0.6, 0.1, 0.9\}$

$\mu_B(x) = \{0.1, 0.5, 0.2, 0.7, 0.8\}$

Then the value of $\mu_{A \cap B}$ will be

A. $\{0.2, 0.5, 0.6, 0.7, 0.9\}$
B. $\{0.2, 0.5, 0.2, 0.1, 0.8\}$
C. $\{0.1, 0.5, 0.6, 0.1, 0.8\}$
D. $\{0.1, 0.5, 0.2, 0.1, 0.8\}$

ugcnetcse-dec2013-paper3 fuzzy-set

Answer key

### 35.27.2 Fuzzy Set: UGC NET CSE | December 2013 | Part 3 | Question: 29 top

The height h(A) of a fuzzy set A is defined as

h(A) = sup A(x)

x ∈ A

The fuzzy set A is called normal when

A. h(A)=0 B. h(A)<0 C. h(A)=1 D. h(A)<0

ugcnetcse-dec2013-paper3 fuzzy-set

Answer key

## 35.28 General Awareness (33) top

### 35.28.1 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 1 top

To organize discussion method in teaching effectively, which of the following conditions should be met?

a. Topic be easy b. Topic be declared in advance c. Topic of common interest d. Availability of more than one teacher e. Language facility of participa

Select appropriate answer from the options given below:

A. b, c, and e B. a, b, and c C. a, b and e D. c, d and e

ugcnetcse-june2019-paper1 general-awareness

Answer key

### 35.28.2 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 10 top

Which of the following is a plagiarism checking website?

A. http://go.turnitin.com
B. http://www.researchgate.com
C. http://www.editorial.elsevier.com
D. http://www.grammarly.com

ugcnetcse-june2019-paper1 general-awareness

Answer key

### 35.28.3 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 11 top

Michaelangelo is famous for having successfully interpreted the human body. His great achievement is that of the painting of David whose hands reach out as a sign of human capability and potential. It is assumed that the time he lived was ripe for exchange of knowledge, development in science and matured enough to advance the horizon of investigation in all fields. Renaissance humanism stressed on a serious rethink on the nature of art that focussed on accurate details. In painting and sculpture, artists focussed on not so casual but verifiable and minute details. Michaelangelo's paintings are no exception to it. In a study published in the journal of the Royal Society of medicine, a group of surgeons are of the opinion that the great master was "afflicted by an illness involving his joints". They have used his portraits as evidence to argue their view. During his life, he complained of what he felt to be 'gout'. Later he complained of his sore and stiff hands which the doctors would find to be natural for someone who was engaged in handmade art. The doctors found corroboration of those claims in portraits of the artist that show a hanging left hand with both degenerative and non-degenerative changes. They attribute the pain not just to arthritis, but to the stress of hammering and chiselling and note that though the master was seen hammering days before his death at an old age, he did not write or sign his own letters before his death. In recent times there have been attempts to diagnose famous artists with diseases that were not known during their time. This practice has raised many questions, especially on the issue of ethics in research. It is also inferred from authentic analysis that Michaelangelo persisted in his work until his last days. This theory would emphasize that his artistic subject defined his physical infirmities.

Michaelangelo lived during a time that lets us know that

A. Human aspirants are limitless and open to new vistas of knowledge
B. Cross cultural exchange in ideas is the only way for human progress
C. It is progress of science and anatomy that contributes to civilizations exclusively
D. Human beings possess language which is the only key to knowledge

ugcnetcse-june2019-paper1 general-awareness passage-reading

### 35.28.4 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 12 top

Michaelangelo is famous for having successfully interpreted the human body. His great achievement is that of the painting of David whose hands reach out as a sign of human capability and potential. It is assumed that the time he lived was ripe for exchange of knowledge, development in science and matured enough to advance the horizon of investigation in all fields. Renaissance humanism stressed on a serious rethink on the nature of art that focussed on a accurate details. In painting and sculpture, artists focussed on not so casual but

verifiable and minute details. Michaelangelo's paintings are no exception to it. In a study published in the journal of the Royal Society of medicine, a group of surgeons are of the opinion that the great master was "afflicted by an illness involving his joints". They have used his portraits as evidence to argue their view. During his life, he complained of what he felt to be 'gout'. Later he complained of his sore and stiff hands which the doctors would find to be natural for someone who was engaged in handmade art. The doctors found corroboration of those claims in portraits of the artist that show a hanging left hand with both degenerative and non-degenerative changes. They attribute the pain not just to arthritis, but to the stress of hammering and chiselling and note that though the master was seen hammering days before his death at an old age, he did not write or sign his own letters before his death. In recent times there have been attempts to diagnose famous artists with diseases that were not known during their time. This practice has raised many questions, especially on the issue of ethics in research. It is also inferred from authentic analysis that Michaelangelo persisted in his work until his last days. This theory would emphasize that his artistic subject defined his physical infirmities.

Renaissance painting in Europe was sceptical of

A. The obsessive medieval method of accuracy
B. The classical simplicity and lack of control
C. The case and decorative excess of earlier art
D. Expressionist technique

ugcnetcse-june2019-paper1 general-awareness passage-reading

## 35.28.5 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 13 top

Michaelangelo is famous for having successfully interpreted the human body. His great achievement is that of the painting of David whose hands reach out as a sign of human capability and potential. It is assumed that the time he lived was ripe for exchange of knowledge, development in science and matured enough to advance the horizon of investigation in all fields. Renaissance humanism stressed on a serious rethink on the nature of art that focussed on a accurate details. In painting and sculpture, artists focussed on not so casual but verifiable and minute details. Michaelangelo's paintings are no exception to it. In a study published in the journal of the Royal Society of medicine, a group of surgeons are of the opinion that the great master was "afflicted by an illness involving his joints". They have used his portraits as evidence to argue their view. During his life, he complained of what he felt to be 'gout'. Later he complained of his sore and stiff hands which the doctors would find to be natural for someone who was engaged in handmade art. The doctors found corroboration of those claims in portraits of the artist that show a hanging left hand with both degenerative and non-degenerative changes. They attribute the pain not just to arthritis, but to the stress of hammering and chiselling and note that though the master was seen hammering days before his death at an old age, he did not write or sign his own letters before his death. In recent times there have been attempts to diagnose famous artists with diseases that were not known during their time. This practice has raised many questions, especially on the issue of ethics in research. It is also inferred from authentic analysis that Michaelangelo persisted in his work until his last days. This theory would emphasize that his artistic subject defined his physical infirmities.

The controversy that the passage above refers to is whether

A. Michaelangelo worked under duress
B. Michaelangelo could contain his physical infirmity by artistic excellence
C. Michaelangelo submitted to disease
D. Michaelangelo survived different diseases before pursuing art

ugcnetcse-june2019-paper1 general-awareness passage-reading

## 35.28.6 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 14 top

Michaelangelo is famous for having successfully interpreted the human body. His great achievement is that of the painting of David whose hands reach out as a sign of human capability and potential. It is assumed that the time he lived was ripe for exchange of knowledge, development in science and matured enough to advance the horizon of investigation in all fields. Renaissance humanism stressed on a serious rethink on the nature of art that focussed on a accurate details. In painting and sculpture, artists focussed on not so casual but verifiable and minute details. Michaelangelo's paintings are no exception to it. In a study published in the journal of the Royal Society of medicine, a group of surgeons are of the opinion that the great master was "afflicted by an illness involving his joints". They have used his portraits as evidence to argue their view. During his life, he complained of what he felt to be 'gout'. Later he complained of his sore and stiff hands which the doctors would find to be natural for someone who was engaged in handmade art. The doctors found corroboration of those claims in portraits of the artist that show a hanging left hand with both degenerative and non-degenerative changes. They attribute the pain not just to arthritis, but to the stress of hammering and chiselling and note that though the master was seen hammering days before his death at an old age, he did not write or sign his own letters before his death. In recent times there have been attempts to diagnose famous artists with diseases that were not known during their

time. This practice has raised many questions, especially on the issue of ethics in research. It is also inferred from authentic analysis that Michaelangelo persisted in his work until his last days. This theory would emphasize that his artistic subject defined his physical infirmities.

What generalisations do people subscribe to?

A. Establishing facts by $DNA$ tests
B. Inferring the essence of character from famous people's handwriting
C. Carbon dating of the hair of celebrities to draw conclusion on their physical structure
D. To retroactively diagnose famous artists and public figures of conditions that were not prevalent during their time

ugcnetcse-june2019-paper1 general-awareness passage-reading

## 35.28.7 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 15 top

Michaelangelo is famous for having successfully interpreted the human body. His great achievement is that of the painting of David whose hands reach out as a sign of human capability and potential. It is assumed that the time he lived was ripe for exchange of knowledge, development in science and matured enough to advance the horizon of investigation in all fields. Renaissance humanism stressed on a serious rethink on the nature of art that focussed on a accurate details. In painting and sculpture, artists focussed on not so casual but verifiable and minute details. Michaelangelo's paintings are no exception to it. In a study published in the journal of the Royal Society of medicine, a group of surgeons are of the opinion that the great master was "afflicted by an illness involving his joints". They have used his portraits as evidence to argue their view. During his life, he complained of what he felt to be 'gout'. Later he complained of his sore and stiff hands which the doctors would find to be natural for someone who was engaged in handmade art. The doctors found corroboration of those claims in portraits of the artist that show a hanging left hand with both degenerative and non-degenerative changes. They attribute the pain not just to arthritis, but to the stress of hammering and chiselling and note that though the master was seen hammering days before his death at an old age, he did not write or sign his own letters before his death. In recent times there have been attempts to diagnose famous artists with diseases that were not known during their time. This practice has raised many questions, especially on the issue of ethics in research. It is also inferred from authentic analysis that Michaelangelo persisted in his work until his last days. This theory would emphasize that his artistic subject defined his physical infirmities.
What actually may be concluded from the above passage?

A. Physical infirmities do dissuade people with capabilities from excelling
B. Excellence in any form triumphs over extraneous factors including physical ailments
C. Michaelangelo's gout and other ailments lessened his efficiency
D. The diseases Michaelangelo faced were due to constant hammering

ugcnetcse-june2019-paper1 general-awareness passage-reading

## 35.28.8 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 16 top

The dance of the honeybee conveying to other bees where nector will be found is an example of

A. Mass communication
B. Group communication
C. Interpersonal communication
D. Intrapersonal communication

ugcnetcse-june2019-paper1 general-awareness

## 35.28.9 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 17 top

Choose the correct sequence of communication from the options given below:

A. Information – exposure – persuasion – behavioural change
B. Persuasion – information – behavioural change – exposure
C. Exposure – information – persuasion – behavioural change
D. Behavioural change – information – persuasion – exposure

ugcnetcse-june2019-paper1 general-awareness

## 35.28.10 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 18 top

Which of the following is a function of mass media?

1. To transmit culture
2. To formulate national policies
3. To help the judiciary take its decision
4. To stabilise the share market

ugcnetcse-june2019-paper1 general-awareness

## 35.28.11 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 19 top

In a classroom situation, a teacher organises group discussion to help arrive at a solution of a problem. In terms of a model communication used, it will be called

A. A transaction model
B. An interaction model
C. A horizontal model
D. A linear model

ugcnetcse-june2019-paper1 general-awareness

## 35.28.12 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 2 top

Who developed the theory of 'Multiple Intelligence'?

A. Alfred Binet
B. L. Thurstone
C. Charles Spearman
D. Howard Gardner

ugcnetcse-june2019-paper1 general-awareness

Answer key

## 35.28.13 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 3 top

From the list of the effective teaching behaviours, identify those which are called key behaviours.

i. Direct, audible and oral delivery to all students
ii. Encouraging students to elaborate on an answer
iii. Warm and nurturing relationships with learners
iv. Varying modes of presentation
v. Preventing misbehaviour with a minimum of class disruption
vi. Organising what is to come and summarising what has gone before

Select your answer from the options given below :

A. i, iv and v
B. i, ii and iii
C. ii, iii and iv
D. iv, v and vi

ugcnetcse-june2019-paper1 general-awareness

## 35.28.14 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 36 top

Which of the following is a type of malware intentionally inserted into a software system that will setoff a malicious function when specified conditions are met?

A. Worm
B. Trojan
C. Spyware
D. Logic bomb

ugcnetcse-june2019-paper1 general-awareness

Answer key

## 35.28.15 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 37 top

Select the true statement about an Operating System (OS)?

A. An OS controls peripherals, allocates memory and organises data into fields and records
B. An OS provides protection against viruses and controls peripherals
C. An OS controls peripheral, and allocates memory and processor time
D. An OS controls the procesor and peripherals and allows user to connect to the Internet

ugcnetcse-june2019-paper1 general-awareness

Answer key

## 35.28.16 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 38 top

Select the option that shows the storage devices in order of capacity from lowest to highest

A. CD-ROM, DVD-ROM, Blu-ray
B. Blu-ray, CD-ROM, DVD-ROM
C. DVD-ROM, Blu-ray, CD-ROM
D. DVD-ROM, CD-ROM, Blu-ray

ugcnetcse-june2019-paper1 general-awareness

Answer key

## 35.28.17 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 39 top

Which of the following statement(s) is/are True in respect of Wireless Technology?

P : Bluetooth is a wireless technology which can be used to connect a headset to a mobile phone.

Q : Bluetooth is a long range wireless technology and is a low cost means of data transfer.

A. P only
B. Q only
C. Both P and Q
D. Neither P nor Q

ugcnetcse-june2019-paper1 general-awareness

Answer key

## 35.28.18 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 4 top

Which of the following statements explains the concepts of inclusive teaching?

A. Teacher facilitates the learning of the gifted students
B. Teacher facilitates the learning of the weak students
C. Teacher takes support of parents of the students to make them learn
D. Teacher makes the students of different backgrounds to learn together in the same class

ugcnetcse-june2019-paper1 general-awareness

Answer key

## 35.28.19 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 40 top

Which one of the following pairs LEAST matches in respect of computers?

A. $1$ Giga Byte : $(1024) \times (1024) \times (1024) \times 8 \text{ bits}$
B. $\text{CRT}$ : Cathode Ray Tube
C. $\text{ROM}$ : Rapid Online Memory
D. $\text{CPU}$ : Central Processing Unit

ugcnetcse-june2019-paper1 general-awareness

Answer key

## 35.28.20 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 41 top

In the last few years, India has been affected by which of the following tropical cyclones?

A. Gaja, Hudhud, Bhima
B. Hudhud, Bhima, Ockhi
C. Gaja, Hudhud, Ockhi
D. Gaja, Bhima, Ockhi

ugcnetcse-june2019-paper1 general-awareness

## 35.28.21 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 42 top

Which of the following are priority areas in relation to the Sustainable Development Goals?

A. No poverty
B. Zero hunger
C. Reducing urbanization
D. Peace, justice and strong institutions

Choose the correct answer from the options given below :

A. a, b, c
B. a, c, d
C. b, c, d
D. a, b, d

ugcnetcse-june2019-paper1 general-awareness

## 35.28.22 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 43 top

Assertion (A) : Methemoglobinemia is a condition in which blood is not able to carry and deliver enough oxygen to the body.

Reason (R) : Consuming drinking water with high nitrate levels may cause methemoglobinemia.

Choose the correct answer from the options given below :

A. Both (A) and (R) are true and (R) is the correct explanation of (A)
B. Both (A) and (R) are true but (R) is not the correct explanation of (A)
C. (A) is true but (R) is false
D. (A) is false but (R) is true

ugcnetcse-june2019-paper1 general-awareness

## 35.28.23 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 44 top

Assertion (A) : High concentration of ozone in the lower troposphere is desirable.

Reason (R) : Ozone present in the atmosphere protects the living organisms on the surface of earth from the harmful ultra-violet radiation of the sun.

Choose the correct answer from the options given below :

A. Both (A) and (R) are true and (R) is the correct explanation of (A)
B. Both (A) and (R) are true but (R) is not the correct explanation of (A)
C. (A) is true but (R) is false
D. (A) is false but (R) is true

ugcnetcse-june2019-paper1 general-awareness

## 35.28.24 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 45 top

Algal blooms in oligotrophic lakes are

A. very frequent B. frequent C. very rare D. widespread

ugcnetcse-june2019-paper1 general-awareness

Answer key

## 35.28.25 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 46 top

In post independence India, which one of the following committee/commission's report deals with all levels of education in India?

A. Sargeant Commission
B. Hartog Committee
C. Kothari Commission
D. Radhakrishnan Commission

ugcnetcse-june2019-paper1 general general-awareness

## 35.28.26 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 47 top

The Education Commission of India that first took serious note of the problem of Brain Drain was

A. The Education Commission of India
B. The University Education Commission
C. The Calcutta University Commission
D. The Sargeant Commission

ugcnetcse-june2019-paper1 general-awareness

## 35.28.27 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 49 top

Which one of the following instructional designs is not a part of SWAYAM launched by Government of India?

A. E-tutorial
B. E-Content
C. Physical interaction
D. Discussion Forum

ugcnetcse-june2019-paper1 general-awareness

Answer key

## 35.28.28 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 5 top

Which among the following best describes the Emotional Intelligence of learners?

a. Understand the emotions of others people and study them
b. Express oneself and study
c. Being rational in thinking
d. Adjusting one's emotions
e. Being creative and open to c
f. Accepting other people as they are

Choose your answer from the options given below :

A. a, d, and f
B. d, e and f
C. a, b, and c
D. b, c and d

ugcnetcse-june2019-paper1 general-awareness

Answer key

## 35.28.29 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 50 top

Which of the following NOT correctly matched?

i. Gyan darshan – Satellite based educational T.V . Channel
ii. Gyan vani – Educational FM Radio network
iii. MOOCs – Massive Open Online Credits

Choose the correct answer from the options given below :

A. Only i and ii
B. Only ii and iii
C. Only iii
D. Only i and iii

ugcnetcse-june2019-paper1 general-awareness

Answer key

## 35.28.30 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 6 top

Bibliography given in a research report

A. Helps those interested in further research
B. Shows the vast knowledge of the researcher
C. Makes the report authentic
D. Is an optional part of the report

ugcnetcse-june2019-paper1 general-awareness

## 35.28.31 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 7 top

The research design is specifically related to which of the following features in research?

i. Sample selection
ii. Formulation of a plan
iii. Deciding about the tool for data collection
iv. Hypothesis making
v. Choice of a field of inquiry

Select your answer from the options given below:

A. ii, iii and iv
B. i, ii and iii
C. ii, iv and v
D. iii, iv and v

ugcnetcse-june2019-paper1 general-awareness

## 35.28.32 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 8 top

Through which research method, the manipulation of an independent variable and its effect on dependent variable is examined with reference to a hypothesis under controlled conditions?

A. Ex-post facto research
B. Descriptive research
C. Case study research
D. Experimental research

ugcnetcse-june2019-paper1 general-awareness

## 35.28.33 General Awareness: UGC NET CSE | June 2019 | Part 1 | Question: 9 top

In which of the following research studies interpretation and meaning get more attention than formulation of generalisations?

i. Historical studies

ii. Survey studies
iii. Philosophical studies
iv. Ethnographic studies
v. Hypothetico – deductive studies
vi. Ex-post facto studies

Choose your answer from the options given below :

A. i, ii and iii B. iv, v and vi C. ii, iv and v D. i, iii and iv

ugcnetcse-june2019-paper1 general-awareness

## 35.29 Hashing (2) top

### 35.29.1 Hashing: UGC NET CSE | December 2010 | Part 2 | Question: 24 top

Linear probing suffers from a problem known as

A. Secondary clustering
B. Primary clustering
C. Both (A) and (B)
D. None of these

ugcnetcse-dec2010-paper2 data-structures hashing

Answer key

### 35.29.2 Hashing: UGC NET CSE | June 2011 | Part 2 | Question: 24 top

Consider a hash table of size $m = 10000$ and the hash function $h(k) = \lfloor m(KA \bmod 1)' \rfloor$ for $A = \frac{(\sqrt{5}-1}{2}$ . The location to the key $k = 123456$ is

A. 46 B. 47 C. 41 D. 43

ugcnetcse-june2011-paper2 data-structures hashing

Answer key

## 35.30 Image Compression (1) top

### 35.30.1 Image Compression: UGC NET CSE | August 2016 | Part 3 | Question: 58 top

Which of the following is not used in standard JPEG image compression ?

A. Huffman coding
B. Runlength encoding
C. Zig-zag scan
D. K-L Transform

ugcnetcse-aug2016-paper3 digital-image-processing image-compression

Answer key

## 35.31 Information System (1) top

### 35.31.1 Information System: UGC NET CSE | December 2015 | Part 3 | Question: 48 top

As compared to rental and leasing methods to acquire computer systems for a Management Information System (MIS), purchase method has following advantage:

A. It has high level of flexibility
B. It does not require cash up-front
C. It is a business investment
D. Little risk of obsolescence

ugcnetcse-dec2015-paper3 information-system

Answer key

## 35.32 Interpreter (1) top

### 35.32.1 Interpreter: UGC NET CSE | June 2011 | Part 2 | Question: 14 top

The scheme of which interpreter translates the source program is known as

A. Paragraph by paragraph
B. Instruction by instruction
C. Line by line
D. None of the above

ugcnetcse-june2011-paper2 compiler-design interpreter

Answer key

## 35.33 Is&software Engineering (1) top

### 35.33.1 Is&software Engineering: UGC NET CSE | June 2011 | Part 2 | Question: 41 top

Which one of the items listed below is not one of the software engineering layers ?

A. Process B. Manufacturing C. Method D. Tools

ugcnetcse-june2011-paper2 is&software-engineering

Answer key

## 35.34 Java (1) top

### 35.34.1 Java: UGC NET CSE | June 2011 | Part 2 | Question: 15 top

Portable program means

A. Program with wheels
B. Independent from its authors
C. Independent of platform
D. None of the above

ugcnetcse-june2011-paper2 programming java

Answer key

## 35.35 Job (1) top

### 35.35.1 Job: UGC NET CSE | June 2011 | Part 2 | Question: 32 top

A special software that is used to create a job queue is called

A. Drive B. Spooler C. Interpreter D. Linkage editor

ugcnetcse-june2011-paper2 operating-system job

Answer key

## 35.36 Linear Programming (3) top

### 35.36.1 Linear Programming: UGC NET CSE | August 2016 | Part 3 | Question: 61 top

Consider the following linear programming problem :

$\max. z = 0.50x_2 - 0.10x_1$

Subject to the constraints

$2x_1 + 5x_2 \leq 80$

$x_1 + x_2 \leq 20$

and $x_1, x_2 \geq 0$

The total maximum profit $(z)$ for the above problem is :

A. $6$ B. $8$ C. $10$ D. $12$

ugcnetcse-aug2016-paper3 linear-programming

Answer key

### 35.36.2 Linear Programming: UGC NET CSE | January 2017 | Part 3 | Question: 70 top

Consider the following LPP:

$$\begin{aligned}
\text{Min.}Z = \quad & x_1 + x_2 + x_3 \\
\text{Subject to} \quad & 3x_1 + 4x_3 \leq 5 \\
& 5x_1 + x_2 + 6x_3 = 7 \\
& 8x_1 + 9x_3 \geq 2, \\
& x_1, x_2, x_3 \geq 0
\end{aligned}$$

The standard form of this LPP shall be:

A.

$$\begin{aligned}
\text{Min.}Z = \quad & x_1 + x_2 + x_3 + 0x_4 + 0x_5 \\
\text{Subject to} \quad & 3x_1 + 4x_3 + x_4 = 5; \\
& 5x_1 + x_2 + 6x_3 = 7; \\
& 8x_1 + 9x_3 - x_5 = 2; \\
& x_1, x_2, x_3, x_4, x_5 \geq 0
\end{aligned}$$

B.

$$\begin{aligned}
\text{Min.}Z = \quad & x_1 + x_2 + x_3 + 0x_4 + 0x_5 - 1(x_6) - 1(x_7) \\
\text{Subject to} \quad & 3x_1 + 4x_3 + x_4 = 5; \\
& 5x_1 + x_2 + 6x_3 + x_6 = 7; \\
& 8x_1 + 9x_3 - x_5 + x_7 = 2; \\
& x_1 \text{ to } x_7 \geq 0
\end{aligned}$$

C.

$$\begin{aligned}
\text{Min.}Z = \quad & x_1 + x_2 + x_3 + 0x_4 + 0x_5 + 0x_6 \\
\text{Subject to} \quad & 3x_1 + 4x_3 + x_4 = 5; \\
& 5x_1 + x_2 + 6x_3 = 7; \\
& 8x_1 + 9x_3 - x_5 + x_6 = 2; \\
& x_1 \text{ to } x_6 \geq 0
\end{aligned}$$

D.

$$\begin{aligned}
\text{Min.}Z = \quad & x_1 + x_2 + x_3 + 0x_4 + 0x_5 + 0x_6 + 0x_7 \\
\text{Subject to} \quad & 3x_1 + 4x_3 + x_4 = 5; \\
& 5x_1 + x_2 + 6x_3 + x_6 = 7 \\
& 8x_1 + 9x_3 - x_5 + x_7 = 2; \\
& x_1 \text{ to } x_7 \geq 0
\end{aligned}$$

ugcnetcse-jan2017-paper3 linear-programming

Answer key

### 35.36.3 Linear Programming: UGC NET CSE | June 2013 | Part 3 | Question: 23 top

At any iteration of simplex method if $\Delta j(Zj–Cj)$ corresponding to any non-basic variable $Xj$ is obtained as zero, the solution under the test is

A. Degenerate solution
B. Unbounded solution
C. Alternative solution
D. Optimal solution

ugcnetcse-june2013-paper3 linear-programming

Answer key

## 35.37 Linker (2) top

### 35.37.1 Linker: UGC NET CSE | June 2011 | Part 2 | Question: 31 top

Object modules generated by assembler that contains unresolved external references are resolved for two or more object module by a/an

A. Operating system
B. Loader
C. Linker
D. Compiler

ugcnetcse-june2011-paper2 operating-system linker

Answer key

### 35.37.2 Linker: UGC NET CSE | June 2011 | Part 2 | Question: 35 top

Which of the following can be accessed by transfer vector approach of linking ?

A. External data segments
B. External subroutine
C. Data located in other procedure
D. All of the above

ugcnetcse-june2011-paper2 operating-system linker

Answer key

## 35.38 Linux (1) top

### 35.38.1 Linux: UGC NET CSE | June 2011 | Part 2 | Question: 40 top

Which command allows you to view your file $24$ lines at a time ?

A. More
B. Cat
C. Pg
D. None of the above

ugcnetcse-june2011-paper2 unix linux

## 35.39 Management Information System (2) top

### 35.39.1 Management Information System: UGC NET CSE | June 2011 | Part 2 | Question: 45 top

Many causes of the software crisis can be traced to mythology based on

A. Management Myths
B. Customer Myths
C. Practitioner Myths
D. All of the above

ugcnetcse-june2011-paper2 management-information-system

Answer key

### 35.39.2 Management Information System: UGC NET CSE | Junet 2015 | Part 3 | Question: 55 top

Match the following :

| | List-I | | List-II |
|---|---|---|---|
| (a) | Intelligence | (i) | Contextual, tacit, transfer needs learning |
| (b) | Knowledge | (ii) | Scattered facts, easily transferrable |
| (c) | Information | (iii) | Judgemental |
| (d) | Data | (iv) | Codifiable, endorsed with relevence and purpose |

**Codes :**

A. (a)-(iii), (b)-(ii), (c)-(iv), (d)-(i)
B. (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)
C. (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)
D. (a)-(i), (b)-(iii), (c)-(iv), (d)-(ii)

ugcnetcse-june2015-paper3 management-information-system

Answer key

## 35.40 Microprocessors (1) top

### 35.40.1 Microprocessors: UGC NET CSE | June 2014 | Part 3 | Question: 45 top

One of the main features that distinguish microprocessor from micro-computers is

A. Words are usually larger in microprocessors.
B. Words are shorter in microprocessors.
C. Microprocessor does not contain $I/O$ devices.
D. None of the above.

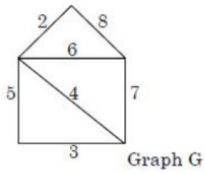
ugcnetjune2014iii microprocessors

Answer key

## 35.41 Minimum Spanning Tree (1) top

### 35.41.1 Minimum Spanning Tree: UGC NET CSE | December 2019 | Part 2 | Question: 6 top

The weight of minimum spanning tree in graph $G$, calculated using Kruskal's algorithm is:




A. $14$ B. $15$ C. $17$ D. $18$

ugcnetcse-dec2019-paper2 algorithms minimum-spanning-tree

Answer key

## 35.42 Mis (1) top

### 35.42.1 Mis: UGC NET CSE | December 2010 | Part 2 | Question: 49 top

The basic concepts of ethics in information society is/are

A. Responsibility
B. Accountability
C. Liability
D. All of the above

ugcnetcse-dec2010-paper2 mis

Answer key

## 35.43 Mobile Communication (2) top

### 35.43.1 Mobile Communication: UGC NET CSE | January 2017 | Part 2 | Question: 48 top

Which of the following is/are true w.r.t. applications of mobile computing?

a. Travelling of salesman
b. Location awareness services

A. a true; b false.
B. Both a and b are true.
C. Both a and b are false.
D. a false; b true.

ugcnetjan2017ii mobile-communication

Answer key

### 35.43.2 Mobile Communication: UGC NET CSE | January 2017 | Part 2 | Question: 49 top

In $3G$ network, $\text{W-CDMA}$ is also known as $\text{UMTS}$. The minimum spectrum allocation required for $\text{W-CDMA}$ is

A. $2$ MHz B. $20$ KHz C. $5$ KHz D. $5$ MHz

ugcnetjan2017ii mobile-communication csma-cd

Answer key

## 35.44 Multiple Document Interface (1) top

### 35.44.1 Multiple Document Interface: UGC NET CSE | August 2016 | Part 3 | Question: 68 top

Which of the following statements is incorrect for a Windows Multiple Document Interface (MDI) ?

A. Each document in an MDI application is displayed in a separate child window within the client area of the application's main window.
B. An MDI application has three kinds of windows namely a frame window, an MDI client window and number of child windows.
C. An MDI application can support more than one kind of document.
D. An MDI application displays output in the client area of the frame window.

ugcnetcse-aug2016-paper3 windows-programming multiple-document-interface

## 35.45 Natural Join (1) top

### 35.45.1 Natural Join: UGC NET CSE | August 2016 | Part 3 | Question: 9 top

Suppose database table $T1(P,R)$ currently has tuples $(10,5),(15,8),(25,6)$ and table $T2(A,C)$ currently has $(10,6),(25,3),(10,5)$. Consider the following three relational algebra queries $RA1, RA2$ and $RA3$:

$RA1 : T1 \bowtie_{T1.P=T2.A} T2$ where $\bowtie$ is natural join symbol

$RA2 : T1 =\bowtie_{T1.P=T2.A} T2$ where $=\bowtie$ is left outer join symbol

$RA3 : T1 \bowtie_{T1.P=T2.A}$ and $_{T1.R=T2.C} T2$

The number of tuples in the resulting table of RA1, RA2 and RA3 are given by :

A. $2,4,2$ respectively
B. $2,3,2$ respectively
C. $3,3,1$ respectively
D. $3,4,1$ respectively

ugcnetcse-aug2016-paper3 databases natural-join

Answer key

## 35.46 Natural Language Processing (1) top

### 35.46.1 Natural Language Processing: UGC NET CSE | June 2014 | Part 3 | Question: 29 top

STRIPS addresses the problem of efficiently representing and implementation of a planner. It is not related to which one of the following?

A. SHAKEY
B. SRI
C. NLP
D. None of these

ugcnetjune2014iii natural-language-processing

Answer key

## 35.47 Network Switching (1) top

### 35.47.1 Network Switching: UGC NET CSE | June 2011 | Part 2 | Question: 30 top

Which of the following switching techniques is most suitable for interactive traffic ?

A. Circuit switching
B. Message switching
C. Packet switching
D. All of the above

ugcnetcse-june2011-paper2 computer-networks network-switching

Answer key

## 35.48 Neural Network (6) top

### 35.48.1 Neural Network: UGC NET CSE | June 2013 | Part 3 | Question: 73 top

A fuzzy set A on R is _____ iff $A(\lambda x_1 + (1-\lambda)x_2) \geq min[A(x_1), A(x_2)]$ for all $x_1, x_2 \in R$ and all $\lambda \in [0,1]$ where minimum denotes the minimum operator.

A. Support
B. $\alpha$ - cut
C. Convex
D. Concave

ugcnetcse-june2013-paper3 neural-network fuzzy-set

Answer key

### 35.48.2 Neural Network: UGC NET CSE | June 2013 | Part 3 | Question: 74 top

If A and B are two fuzzy sets with membership functions

$\mu_A(x) = \{0.6, 0.5, 0.1, 0.7, 0.8\}$

$\mu_B(x) = \{0.9, 0.2, 0.6, 0.8, 0.5\}$

Then the value of $\mu_{\overline{A \cup B}}(x)$ will be

A. $\{0.9, 0.5, 0.6, 0.8, 0.8\}$
B. $\{0.6, 0.2, 0.1, 0.7, 0.5\}$
C. $\{0.1, 0.5, 0.4, 0.2, 0.2\}$
D. $\{0.1, 0.5, 0.4, 0.2, 0.3\}$

ugcnetcse-june2013-paper3 neural-network fuzzy-set

Answer key

## 35.48.3 Neural Network: UGC NET CSE | Junet 2015 | Part 3 | Question: 70 top

Consider the two class classification task that consists of the following points:

Class $C_1$ : [1 1.5] [1 -1.5]
Class $C_2$ : [-2 2.5] [-2 -2.5]
The decision boundary between the two classes using single perceptron is given by:

A. $x_1 + x_2 + 1.5 = 0$ B. $x_1 + x_2 - 1.5 = 0$ C. $x_1 + 1.5 = 0$ D. $x_1 - 1.5 = 0$

ugcnetcse-june2015-paper3 fuzzy-set neural-network

Answer key

## 35.48.4 Neural Network: UGC NET CSE | Junet 2015 | Part 3 | Question: 71 top

Let A and B be two fuzzy integers defined as:

A={(1.0.3), (2, 0.6), (3, 1), (4, 0.7), (5, 0.2)}

B={(10, 0.5), (11, 1), (12, 0.5)}

Using fuzzy arithmetic operation given by

$\mu_{A+B^{(Z)}} = \underset{x+y=z}{\oplus} (\mu_A(x) \otimes \mu_B(y))$

$f(A+B)$ is _____ . [Note: $\oplus \equiv max; \ \otimes \equiv min$]

A. {(11, 0.8), (13, 1), (15, 1)}
B. {(11, 0.3), (12, 0.5), (13, 1), (14, 1), (15, 1), (16, 0.5), (17, 0.2)}
C. {(11, 0.3), (12, 0.5), (13, 0.6), (14, 1), (15, 1), (16, 0.5), (17, 0.2)}
D. {(11, 0.3), (12, 0.5), (13, 0.6), (14, 1), (15, 0.7), (16, 0.5), (17, 0.2)}

ugcnetcse-june2015-paper3 fuzzy-set neural-network

Answer key

## 35.48.5 Neural Network: UGC NET CSE | Junet 2015 | Part 3 | Question: 72 top

Suppose the function y and a fuzzy integer number around - 4 for x are given as $y = (x-3)^2 + 2$. Around - 4 ={(2, 0.3), (3, 0.6), (4, 1), (5, 0.6), (6, 0.3)} respectively. Then f(Around-4) is given by

A. {(2, 0.6), (3, 0.3), (6, 1), (11, 0.3)}
B. {(2, 0.6), (3, 1), (6, 1), (11, 0.3)}
C. {(2, 0.6), (3, 1), (6, 0.6), (11, 0.3)}
D. {(2, 0.6), (3, 0.3), (6, 0.6), (11, 0.3)}

ugcnetcse-june2015-paper3 fuzzy-set neural-network

Answer key

## 35.48.6 Neural Network: UGC NET CSE | September 2013 | Part 3 | Question: 27 top

Support of a fuzzy set $A = \left\{\frac{x_1}{0.2}, \frac{x_2}{0.15}, \frac{x_3}{0.9}, \frac{x_4}{0.95}, \frac{x_5}{0.15}\right\}$ within a universal set X is given as

A. $\left\{\frac{x_1}{0.15}, \frac{x_2}{0.15}, \frac{x_3}{0.15}, \frac{x_4}{0.15}, \frac{x_5}{0.15}\right\}$
B. $\left\{\frac{x_1}{0.95}, \frac{x_2}{0.95}, \frac{x_3}{0.95}, \frac{x_4}{0.915}, \frac{x_5}{0.95}\right\}$
C. $\{x_3, x_4\}$
D. $\{x_1, x_2, x_3, x_4, x_5\}$

ugcnetcse-sep2013-paper3 neural-network fuzzy-set

Answer key

## 35.49 Oops Concept (1) top

### 35.49.1 Oops Concept: UGC NET CSE | August 2016 | Part 2 | Question: 14 top

In C++, polymorphism requires :

A. Inheritance only
B. Virtual functions only
C. References only
D. Inheritance, Virtual functions and references

ugcnetcse-aug2016-paper2 c++ oops-concept

Answer key

## 35.50 Operator Overloading (1) top

### 35.50.1 Operator Overloading: UGC NET CSE | June 2011 | Part 2 | Question: 13 top

The goal of operator overloading is

A. To help the user of a class
B. To help the developer of a class
C. To help define friend function
D. None of the above

ugcnetcse-june2011-paper2 object-oriented-programming operator-overloading

Answer key

## 35.51 Pipelining (1) top

### 35.51.1 Pipelining: UGC NET CSE | December 2019 | Part 2 | Question: 9 top

A non-pipelined system takes $30\text{ns}$ to process a task. The same task can be processed in a four-segment pipeline with a clock cycle of $10\text{ns}$. Determine the speed up of the pipeline for $100$ tasks.

A. $3$
B. $4$
C. $3.91$
D. $2.91$

ugcnetcse-dec2019-paper2 co-and-architecture pipelining

Answer key

## 35.52 Process Scheduling (2) top

### 35.52.1 Process Scheduling: UGC NET CSE | June 2011 | Part 2 | Question: 38 top

A relationship between processes such that each has some part (critical section) which must not be executed while the critical section of another is being executed, is known as

A. Semaphore
B. Mutual exclusion
C. Multiprogramming
D. Message passing

ugcnetcse-june2011-paper2 operating-system process-scheduling

Answer key

### 35.52.2 Process Scheduling: UGC NET CSE | June 2011 | Part 2 | Question: 39 top

How many states can a process be in ?

A. $3$
B. $4$
C. $2$
D. $5$

ugcnetcse-june2011-paper2 operating-system process-scheduling

Answer key

## 35.53 Prolog (1) top

### 35.53.1 Prolog: UGC NET CSE | August 2016 | Part 3 | Question: 75 top

Which formal system provides the semantic foundation for Prolog ?

A. Predicate calculus
B. Lambda calculus
C. Hoare logic
D. Propositional logic

ugcnetcse-aug2016-paper3 artificial-intelligence prolog

Answer key

## 35.54 Quadratic Equations (1) top

### 35.54.1 Quadratic Equations: UGC NET CSE | June 2013 | Part 3 | Question: 11 top

The golden ratio $\varphi$ and its conjugate $\bar{\varphi}$ both satisfy the equation

A. $x^3 - x - 1 = 0$
B. $x^3 + x - 1 = 0$
C. $x^2 - x - 1 = 0$
D. $x^2 + x - 1 = 0$

ugcnetcse-june2013-paper3 quadratic-equations

Answer key

## 35.55 Queue (1) top

### 35.55.1 Queue: UGC NET CSE | June 2011 | Part 2 | Question: 25 top

When the priority queue is represented by max heap, the insertion and deletion of an element can be performed in (queue containing $n$ elements)

A. $\theta(n)$ and $\theta(1)$ respectively
B. $\theta(n)$ and $\theta(n)$ respectively
C. $\theta(1)$ and $\theta(1)$ respectively
D. None of the above

ugcnetcse-june2011-paper2 data-structures queue heap

Answer key

## 35.56 Rdbms (2) top

### 35.56.1 Rdbms: UGC NET CSE | August 2016 | Part 2 | Question: 16 top

DBMS provides the facility of accessing data from a database through

A. DDL
B. DML
C. DBA
D. Schema

ugcnetcse-aug2016-paper2 databases rdbms

Answer key

### 35.56.2 Rdbms: UGC NET CSE | August 2016 | Part 2 | Question: 18 top

Consider the following statements regarding relational database model :

(a) NULL values can be used to opt a tuple out of enforcement of a foreign key.

(b) Suppose that table T has only one candidate key. If Q is in $3$NF, then it is also in BCNF.

(c) The difference between the project operator $(\pi)$ in relational algebra and the SELECT keyword in SQL is that if the resulting table/set has more than one occurrences of the same tuple, then $\pi$ will return only one of them, while SQL SELECT will return all. One can determine that :

A. (a) and (b) are true.
B. (a) and (c) are true.
C. (b) and (c) are true.
D. (a), (b) and (c) are true.

ugcnetcse-aug2016-paper2 databases rdbms

Answer key

## 35.57 Relations (1) top

### 35.57.1 Relations: UGC NET CSE | January 2017 | Part 3 | Question: 71 top

Let $R$ and $S$ be two fuzzy relations defined as:

$$R = \begin{array}{c} \\ x_1 \\ x_2 \end{array} \begin{array}{c} \begin{array}{cc} y_1 & y_2 \end{array} \\ \begin{bmatrix} 0.6 & 0.4 \\ 0.7 & 0.3 \end{bmatrix} \end{array} \text{ and}$$

$$S = \begin{array}{c} \\ y_1 \\ y_2 \end{array} \begin{array}{c} \begin{array}{ccc} z_1 & z_2 & z_3 \end{array} \\ \begin{bmatrix} 0.8 & 0.5 & 0.1 \\ 0.0 & 0.6 & 0.4 \end{bmatrix} \end{array}$$

Then, the resulting relation, $T$, which relates elements of universe $x$ to the elements of universe $z$ using max-min composition is given by:

A.

$$T = \begin{array}{c} \\ x_1 \\ x_2 \end{array} \begin{array}{c} \begin{array}{ccc} z_1 & z_2 & z_3 \end{array} \\ \begin{bmatrix} 0.4 & 0.6 & 0.4 \\ 0.7 & 0.7 & 0.7 \end{bmatrix} \end{array}$$

B.

$$T = \begin{array}{c} \\ x_1 \\ x_2 \end{array} \begin{array}{c} \begin{array}{ccc} z_1 & z_2 & z_3 \end{array} \\ \begin{bmatrix} 0.4 & 0.6 & 0.4 \\ 0.8 & 0.5 & 0.4 \end{bmatrix} \end{array}$$

C.

$$T = \begin{array}{c} \\ x_1 \\ x_2 \end{array} \begin{array}{c} \begin{array}{ccc} z_1 & z_2 & z_3 \end{array} \\ \begin{bmatrix} 0.6 & 0.5 & 0.4 \\ 0.7 & 0.5 & 0.3 \end{bmatrix} \end{array}$$

D.

$$T = \begin{array}{c} \\ x_1 \\ x_2 \end{array} \begin{array}{c} \begin{array}{ccc} z_1 & z_2 & z_3 \end{array} \\ \begin{bmatrix} 0.6 & 0.5 & 0.5 \\ 0.7 & 0.7 & 0.7 \end{bmatrix} \end{array}$$

ugcnetcse-jan2017-paper3 engineering-mathematics relations

Answer key

## 35.58 Semantic Nets (1) top

### 35.58.1 Semantic Nets: UGC NET CSE | August 2016 | Part 3 | Question: 72 top

In Artificial Intelligence , a semantic network

A. Is a graph-based method of knowledge representation where nodes represent concepts and arcs represent relations between concepts.
B. Is a graph-based method of knowledge representation where nodes represent relations between concepts and arcs represent concepts.
C. Represents an entity as a set of slots and associated rules.
D. Is a subset of first-order logic.

ugcnetcse-aug2016-paper3 artificial-intelligence semantic-nets

Answer key

## 35.59 Shell (1) top

### 35.59.1 Shell: UGC NET CSE | September 2013 | Part 3 | Question: 4 top

Which of the following is not a part of an expert system shell?

A. Knowledge base
B. Interference engine
C. Explanation facility
D. None of the above

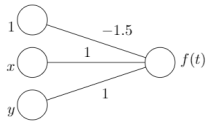
ugcnetcse-sep2013-paper3 unix linux shell

Answer key

## 35.60 Single Layer Perceptron (1) top

### 35.60.1 Single Layer Perceptron: UGC NET CSE | June 2013 | Part 3 | Question: 75 top

Consider a single perception with weights as given in the following figure:




and $f(t)$ is defined as

$$f(t)\begin{cases}1, t > 0\\ 0, t \leq 0\end{cases}$$

The above perception can solve

A. OR problem
B. AND problem
C. XOR problem
D. All of the above

ugcnetcse-june2013-paper3 neural-network single-layer-perceptron

Answer key

## 35.61 Software Development Life Cycle Models (1) top

### 35.61.1 Software Development Life Cycle Models: UGC NET CSE | June 2011 | Part 2 | Question: 42 top

What is the first stage in program development ?

A. Specification and design
B. System Analysis
C. Testing
D. None of the above

ugcnetcse-june2011-paper2 is&software-engineering software-development-life-cycle-models

Answer key

## 35.62 Software Engineering Framework (1) top

### 35.62.1 Software Engineering Framework: UGC NET CSE | June 2011 | Part 2 | Question: 44 top

Which of these are the 5 generic software engineering framework activities ?

A. Communication, planning, modelling, construction, deployment
B. Communication, risk management, measurement, production, reviewing
C. Analysis, designing, programming, Debugging, maintenance
D. Analysis, planning, designing, programming, testing

ugcnetcse-june2011-paper2 is&software-engineering software-engineering-framework

Answer key

## 35.63 Software Testing (1) top

### 35.63.1 Software Testing: UGC NET CSE | Junet 2015 | Part 3 | Question: 43 top

Verification:

A. refers to the set of activities that ensure that software correctly implements a specific function
B. Gives answer to the question - Are we building the right product
C. requires execution of software
D. both A and B

software-testing non-gate ugcnetcse-june2015-paper3

Answer key

## 35.64 System Software Compilers (1) top

### 35.64.1 System Software Compilers: UGC NET CSE | August 2016 | Part 3 | Question: 45 top

Match each software term in List-I to its description in List-II :

| | List-I | | List-II |
|---|---|---|---|
| I. | Wizards | a. | forms that provides structure for a document. |
| II. | Templates | b. | A series of commands grouped into a single command. |
| III. | Macros | c. | A single program that incorporates most commonly used tools. |
| IV. | Integrated Software | d. | step by step guide in application software. |
| V. | Software Suite | e. | Bundled group of software program |

**Codes :**

A. a-ii, b-iii, c-iv, d-i, e-v
B. a-ii, b-i, c-iv, d-iii, e-v
C. a-iv, b-iii, c-v, d-i, e-ii
D. a-iv, b-iii, c-ii, d-v, e-i

ugcnetcse-aug2016-paper3 system-software-compilers macros

Answer key

## 35.65 Transaction And Concurrency (3) top

### 35.65.1 Transaction And Concurrency: UGC NET CSE | June 2011 | Part 2 | Question: 16 top

Which of the following is the recovery management technique in DDBMS ?

A. 2PC (Two Phase Commit)
B. Backup
C. Immediate update
D. All of the above

ugcnetcse-june2011-paper2 databases transaction-and-concurrency

Answer key

### 35.65.2 Transaction And Concurrency: UGC NET CSE | June 2011 | Part 2 | Question: 18 top

The basic variants of time-stampbased method of concurrency control are

A. Total time stamp-ordering
B. Partial time stamp ordering
C. Multiversion Time stamp ordering
D. All of the above

ugcnetcse-june2011-paper2 databases transaction-and-concurrency

Answer key

### 35.65.3 Transaction And Concurrency: UGC NET CSE | June 2011 | Part 2 | Question: 19 top

A transaction can include following basic database access operations :

A. Read_item(X)
B. Write_item(X)
C. Both (A) and (B)
D. None of these

ugcnetcse-june2011-paper2 databases transaction-and-concurrency

Answer key

## 35.66 Transportation Problem (3) top

### 35.66.1 Transportation Problem: UGC NET CSE | August 2016 | Part 3 | Question: 63 top

Consider the following statements :

(a) Assignment problem can be used to minimize the cost.

(b) Assignment problem is a special case of transportation problem.

(c) Assignment problem requires that only one activity be assigned to each resource.

Which of the following options is correct ?

A. (a) and (b) only
B. (a) and (c) only
C. (b) and (c) only
D. (a), (b) and (c)

ugcnetcse-aug2016-paper3 linear-programming transportation-problem

Answer key

### 35.66.2 Transportation Problem: UGC NET CSE | June 2013 | Part 3 | Question: 24 top

A basic feasible solution to a m-origin, n-destination transportation problem is said to be _____ if the number of positive allocations are less than m+n-1.

A. degenerate B. non- degenerate C. unbounded D. unbalanced

ugcnetcse-june2013-paper3 linear-programming transportation-problem

Answer key

### 35.66.3 Transportation Problem: UGC NET CSE | June 2013 | Part 3 | Question: 25 top

The total transportation cost in an initial basic feasible solution to the following transportation problem using Vogel's Approximation method is

| | W1 | W2 | W3 | W4 | W5 | Supply |
|---|---|---|---|---|---|---|
| F1 | 4 | 2 | 3 | 2 | 6 | 8 |
| F2 | 5 | 4 | 5 | 2 | 1 | 12 |
| F3 | 6 | 5 | 4 | 7 | 3 | 14 |
| Demand | 4 | 4 | 6 | 8 | 8 | |

A. $76$ B. $80$ C. $90$ D. $96$

ugcnetcse-june2013-paper3 linear-programming transportation-problem

Answer key

## 35.67 Tree (1) top

### 35.67.1 Tree: UGC NET CSE | June 2011 | Part 2 | Question: 21 top

The number of different trees with $8$ nodes is

A. 256 B. 255 C. 248 D. None of these

ugcnetcse-june2011-paper2 algorithms tree

Answer key

## 35.68 Unix (4) top

### 35.68.1 Unix: UGC NET CSE | August 2016 | Part 3 | Question: 67 top

Consider the following operations to be performed in Unix : "The pipe sorts all files in the current directory modified in the month of "June" by order of size and prints them to the terminal screen. The sort option skips ten fields then sorts the lines in numeric order." Which of the following Unix command will perform above set of operations ?

A. ls - $1$ | grep "June" | sort + $10$n
B. ls - $1$ | grep "June" | sort + $10$r
C. ls - $1$ | grep - $v$ "June" | sort + $10$n
D. ls - $1$ | grep - $n$ "June" | sort + $10$x

ugcnetcse-aug2016-paper3 unix

Answer key

### 35.68.2 Unix: UGC NET CSE | August 2016 | Part 3 | Question: 69 top

Which of the following statement(s) is/are True regarding 'nice' command of UNIX ?

I. It is used to set or change the priority of a process.

II. A process's nice value can be set at the time of creation.

III. 'nice' takes a command line as an argument.

A. $I, II$ only B. $II, III$ only C. $I, II, III$ D. $I, III$ only

ugcnetcse-aug2016-paper3 unix

Answer key

### 35.68.3 Unix: UGC NET CSE | December 2010 | Part 2 | Question: 37 top

Which of the following command the file names in multiple columns ?

A. $IS - X$ B. $IS$ C. $IS - 1$ D. $IS - f - X$

ugcnetcse-dec2010-paper2 unix

### 35.68.4 Unix: UGC NET CSE | September 2013 | Part 2 | Question: 48 top

Which of the following set of Unix commands will always display “WELCOME”?

A. export title =WELCOME; Echo $title
B. title =WELCOME; export $title ; sh –c “echo $title”
C. title =WELCOME; export title ; sh –c “echo $title”
D. title =WELCOME; echo $title

ugcnetsep2013ii unix

Answer key

## 35.69 Virtual Memory (1) top

### 35.69.1 Virtual Memory: UGC NET CSE | June 2011 | Part 2 | Question: 47 top

Virtual memory is

A. Related to virtual reality
B. A form of ROM
C. A form of RAM
D. None of the above

ugcnetcse-june2011-paper2 co-and-architecture virtual-memory

Answer key

## 35.70 Windows (5) top

### 35.70.1 Windows: UGC NET CSE | December 2008 | Part 2 | Question: 50 top

(I) Each object in the active directory of windows 2000 has an access control list.

(II) The scheme is a blueprint of all objects in the domain of windows 2000.

Which of the following is true?

A. only (I)
B. only (II)
C. both (I) and (II)
D. None of the above

ugcnetcse-dec2008-paper2 windows

Answer key

### 35.70.2 Windows: UGC NET CSE | June 2007 | Part 2 | Question: 37 top

Windows is a _____ operating system:

A. Non-preemptive B. Preemptive C. Multi-user D. Real time

ugcnetcse-june2007-paper2 operating-system windows

Answer key

### 35.70.3 Windows: UGC NET CSE | June 2014 | Part 3 | Question: 38 top

A part of Windows $2000$ operating system that is not portable is

A. Device Management
B. Virtual Memory Management
C. Processor Management
D. User Interface

ugcnetjune2014iii windows

Answer key

### 35.70.4 Windows: UGC NET CSE | June 2014 | Part 3 | Question: 47 top

All the classes necessary for windows programming are available in the module :

A. win.txt
B. win.main
C. win.std
D. MFC

ugcnetjune2014iii windows

Answer key

### 35.70.5 Windows: UGC NET CSE | June 2014 | Part 3 | Question: 48 top

Windows $32$ API supports

A. $16$-bit Windows
B. $32$-bit Windows
C. $64$-bit Windows
D. All of the above

ugcnetjune2014iii windows

Answer key

## 35.71 Windows Programming (2) top

### 35.71.1 Windows Programming: UGC NET CSE | June 2009 | Part 2 | Question: 50 top

We cannot delete the _____ icon but we can made it invisible.

A. Recycle
B. My Computer
C. Internet explorer
D. None of the above

ugcnetcse-june2009-paper2 windows-programming

### 35.71.2 Windows Programming: UGC NET CSE | Junet 2015 | Part 3 | Question: 74 top

WOW32 is a

A. Win 32 API library for creating processes and threads
B. Special kind of file system to the NT name space
C. Kernel-mode objects accessible through Win 32 API
D. Special execution environment used to run 16 bit Windows applications on 32-bit machines

ugcnetcse-june2015-paper3 windows-programming

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 35.0.1 | Q-Q | 35.0.2 | Q-Q | 35.0.3 | Q-Q | 35.0.4 | Q-Q | 35.0.5 | D |
| 35.0.6 | Q-Q | 35.0.7 | Q-Q | 35.0.8 | Q-Q | 35.0.9 | Q-Q | 35.0.10 | Q-Q |
| 35.0.11 | Q-Q | 35.0.12 | Q-Q | 35.0.13 | Q-Q | 35.0.14 | Q-Q | 35.0.15 | Q-Q |
| 35.0.16 | Q-Q | 35.0.17 | Q-Q | 35.0.18 | Q-Q | 35.0.19 | Q-Q | 35.0.20 | Q-Q |
| 35.0.21 | Q-Q | 35.0.22 | Q-Q | 35.0.23 | Q-Q | 35.0.24 | Q-Q | 35.0.25 | Q-Q |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 35.0.26 | Q-Q | 35.0.27 | Q-Q | 35.0.28 | Q-Q | 35.0.29 | D | 35.0.30 | A |
| 35.0.31 | C | 35.0.32 | A | 35.0.33 | D | 35.0.34 | B | 35.0.35 | D |
| 35.0.36 | D | 35.0.37 | C | 35.0.38 | C | 35.0.39 | B | 35.0.40 | B |
| 35.0.41 | B | 35.0.42 | B | 35.0.43 | C | 35.0.44 | D | 35.0.45 | D |
| 35.0.46 | B | 35.0.47 | B | 35.0.48 | D | 35.0.49 | A | 35.0.50 | D |
| 35.0.51 | B | 35.0.52 | A | 35.0.53 | B | 35.0.54 | Q-Q | 35.0.55 | Q-Q |
| 35.0.56 | D | 35.0.57 | Q-Q | 35.0.58 | Q-Q | 35.0.59 | Q-Q | 35.0.60 | Q-Q |
| 35.0.61 | Q-Q | 35.0.62 | Q-Q | 35.0.63 | Q-Q | 35.0.64 | Q-Q | 35.0.65 | Q-Q |
| 35.0.66 | Q-Q | 35.0.67 | Q-Q | 35.0.68 | Q-Q | 35.0.69 | Q-Q | 35.0.70 | B |
| 35.0.71 | Q-Q | 35.0.72 | Q-Q | 35.0.73 | Q-Q | 35.0.74 | Q-Q | 35.0.75 | Q-Q |
| 35.0.76 | Q-Q | 35.0.77 | Q-Q | 35.0.78 | Q-Q | 35.0.79 | Q-Q | 35.0.80 | Q-Q |
| 35.0.81 | Q-Q | 35.0.82 | Q-Q | 35.0.83 | Q-Q | 35.0.84 | Q-Q | 35.0.85 | Q-Q |
| 35.0.86 | Q-Q | 35.0.87 | Q-Q | 35.0.88 | Q-Q | 35.0.89 | Q-Q | 35.0.90 | Q-Q |
| 35.0.91 | Q-Q | 35.0.92 | Q-Q | 35.0.93 | Q-Q | 35.0.94 | Q-Q | 35.0.95 | Q-Q |
| 35.0.96 | Q-Q | 35.0.97 | Q-Q | 35.0.98 | Q-Q | 35.0.99 | Q-Q | 35.0.100 | Q-Q |
| 35.0.101 | Q-Q | 35.0.102 | Q-Q | 35.0.103 | Q-Q | 35.0.104 | Q-Q | 35.0.105 | Q-Q |
| 35.0.106 | Q-Q | 35.0.107 | Q-Q | 35.0.108 | Q-Q | 35.0.109 | Q-Q | 35.0.110 | D |
| 35.0.111 | D | 35.0.112 | Q-Q | 35.0.113 | Q-Q | 35.0.114 | Q-Q | 35.0.115 | Q-Q |
| 35.0.116 | Q-Q | 35.0.117 | Q-Q | 35.0.118 | Q-Q | 35.0.119 | D | 35.0.120 | Q-Q |
| 35.0.121 | Q-Q | 35.0.122 | Q-Q | 35.0.123 | Q-Q | 35.0.124 | Q-Q | 35.0.125 | Q-Q |
| 35.0.126 | Q-Q | 35.0.127 | Q-Q | 35.0.128 | Q-Q | 35.0.129 | Q-Q | 35.0.130 | Q-Q |
| 35.0.131 | Q-Q | 35.0.132 | Q-Q | 35.0.133 | Q-Q | 35.0.134 | Q-Q | 35.0.135 | Q-Q |
| 35.0.136 | Q-Q | 35.0.137 | Q-Q | 35.0.138 | C | 35.0.139 | Q-Q | 35.0.140 | Q-Q |
| 35.0.141 | B | 35.0.142 | D | 35.0.143 | A | 35.0.144 | A | 35.0.145 | C |
| 35.0.146 | A | 35.0.147 | C | 35.0.148 | Q-Q | 35.0.149 | Q-Q | 35.0.150 | Q-Q |
| 35.0.151 | Q-Q | 35.0.152 | Q-Q | 35.0.153 | Q-Q | 35.0.154 | D | 35.0.155 | A |
| 35.0.156 | A | 35.0.157 | C | 35.0.158 | D | 35.0.159 | A | 35.0.160 | D |
| 35.0.161 | Q-Q | 35.0.162 | B | 35.0.163 | Q-Q | 35.0.164 | C | 35.0.165 | Q-Q |
| 35.0.166 | Q-Q | 35.0.167 | A | 35.0.168 | Q-Q | 35.0.169 | Q-Q | 35.0.170 | Q-Q |
| 35.0.171 | Q-Q | 35.0.172 | Q-Q | 35.0.173 | Q-Q | 35.0.174 | Q-Q | 35.0.175 | Q-Q |
| 35.0.176 | Q-Q | 35.0.177 | Q-Q | 35.0.178 | Q-Q | 35.0.179 | Q-Q | 35.0.180 | Q-Q |
| 35.0.181 | Q-Q | 35.0.182 | Q-Q | 35.0.183 | Q-Q | 35.0.184 | C | 35.0.185 | Q-Q |
| 35.0.186 | B | 35.0.187 | C | 35.0.188 | C | 35.0.189 | D | 35.0.190 | A |
| 35.0.191 | B | 35.0.192 | C | 35.0.193 | Q-Q | 35.0.194 | Q-Q | 35.0.195 | Q-Q |
| 35.0.196 | Q-Q | 35.0.197 | Q-Q | 35.0.198 | Q-Q | 35.0.199 | Q-Q | 35.0.200 | Q-Q |
| 35.0.201 | Q-Q | 35.0.202 | Q-Q | 35.0.203 | Q-Q | 35.0.204 | Q-Q | 35.0.205 | C |
| 35.0.206 | Q-Q | 35.0.207 | Q-Q | 35.0.208 | Q-Q | 35.0.209 | Q-Q | 35.0.210 | Q-Q |
| 35.0.211 | Q-Q | 35.0.212 | Q-Q | 35.0.213 | Q-Q | 35.0.214 | Q-Q | 35.0.215 | Q-Q |
| 35.0.216 | Q-Q | 35.0.217 | Q-Q | 35.0.218 | Q-Q | 35.0.219 | Q-Q | 35.0.220 | Q-Q |
| 35.0.221 | Q-Q | 35.0.222 | Q-Q | 35.0.223 | Q-Q | 35.0.224 | Q-Q | 35.0.225 | Q-Q |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 35.0.226 | Q-Q | 35.0.227 | Q-Q | 35.0.228 | Q-Q | 35.0.229 | Q-Q | 35.0.230 | Q-Q |
| 35.0.231 | Q-Q | 35.0.232 | Q-Q | 35.0.233 | Q-Q | 35.0.234 | Q-Q | 35.0.235 | Q-Q |
| 35.0.236 | Q-Q | 35.0.237 | Q-Q | 35.0.238 | Q-Q | 35.0.239 | Q-Q | 35.0.240 | Q-Q |
| 35.0.241 | Q-Q | 35.0.242 | Q-Q | 35.0.243 | Q-Q | 35.0.244 | Q-Q | 35.0.245 | Q-Q |
| 35.0.246 | Q-Q | 35.0.247 | Q-Q | 35.0.248 | Q-Q | 35.0.249 | Q-Q | 35.0.250 | Q-Q |
| 35.0.251 | Q-Q | 35.0.252 | Q-Q | 35.0.253 | Q-Q | 35.0.254 | Q-Q | 35.0.255 | Q-Q |
| 35.0.256 | Q-Q | 35.0.257 | Q-Q | 35.0.258 | Q-Q | 35.0.259 | Q-Q | 35.0.260 | Q-Q |
| 35.0.261 | Q-Q | 35.0.262 | Q-Q | 35.0.263 | Q-Q | 35.0.264 | Q-Q | 35.0.265 | Q-Q |
| 35.0.266 | Q-Q | 35.0.267 | Q-Q | 35.0.268 | Q-Q | 35.0.269 | Q-Q | 35.0.270 | Q-Q |
| 35.0.271 | Q-Q | 35.0.272 | Q-Q | 35.0.273 | Q-Q | 35.0.274 | Q-Q | 35.0.275 | Q-Q |
| 35.0.276 | Q-Q | 35.0.277 | Q-Q | 35.0.278 | Q-Q | 35.0.279 | Q-Q | 35.0.280 | Q-Q |
| 35.0.281 | Q-Q | 35.0.282 | Q-Q | 35.0.283 | Q-Q | 35.0.284 | Q-Q | 35.0.285 | Q-Q |
| 35.0.286 | Q-Q | 35.0.287 | Q-Q | 35.0.288 | Q-Q | 35.0.289 | Q-Q | 35.0.290 | Q-Q |
| 35.0.291 | Q-Q | 35.0.292 | Q-Q | 35.0.293 | Q-Q | 35.0.294 | Q-Q | 35.0.295 | Q-Q |
| 35.0.296 | Q-Q | 35.0.297 | Q-Q | 35.0.298 | Q-Q | 35.0.299 | Q-Q | 35.0.300 | Q-Q |
| 35.0.301 | Q-Q | 35.0.302 | Q-Q | 35.0.303 | Q-Q | 35.0.304 | Q-Q | 35.0.305 | Q-Q |
| 35.0.306 | Q-Q | 35.0.307 | Q-Q | 35.0.308 | Q-Q | 35.0.309 | Q-Q | 35.0.310 | Q-Q |
| 35.0.311 | Q-Q | 35.0.312 | Q-Q | 35.0.313 | Q-Q | 35.0.314 | Q-Q | 35.0.315 | Q-Q |
| 35.0.316 | Q-Q | 35.0.317 | Q-Q | 35.0.318 | Q-Q | 35.0.319 | Q-Q | 35.0.320 | Q-Q |
| 35.0.321 | Q-Q | 35.0.322 | Q-Q | 35.0.323 | Q-Q | 35.0.324 | Q-Q | 35.0.325 | Q-Q |
| 35.0.326 | Q-Q | 35.0.327 | Q-Q | 35.0.328 | Q-Q | 35.0.329 | Q-Q | 35.0.330 | Q-Q |
| 35.0.331 | Q-Q | 35.0.332 | Q-Q | 35.0.333 | Q-Q | 35.0.334 | Q-Q | 35.0.335 | Q-Q |
| 35.0.336 | Q-Q | 35.0.337 | Q-Q | 35.0.338 | Q-Q | 35.0.339 | Q-Q | 35.0.340 | Q-Q |
| 35.0.341 | Q-Q | 35.0.342 | Q-Q | 35.0.343 | Q-Q | 35.0.344 | Q-Q | 35.0.345 | Q-Q |
| 35.0.346 | Q-Q | 35.0.347 | Q-Q | 35.0.348 | Q-Q | 35.0.349 | Q-Q | 35.0.350 | Q-Q |
| 35.0.351 | Q-Q | 35.0.352 | Q-Q | 35.0.353 | Q-Q | 35.0.354 | Q-Q | 35.0.355 | Q-Q |
| 35.0.356 | Q-Q | 35.0.357 | Q-Q | 35.0.358 | Q-Q | 35.0.359 | Q-Q | 35.0.360 | Q-Q |
| 35.0.361 | Q-Q | 35.0.362 | Q-Q | 35.0.363 | Q-Q | 35.0.364 | Q-Q | 35.0.365 | Q-Q |
| 35.0.366 | Q-Q | 35.0.367 | Q-Q | 35.0.368 | Q-Q | 35.0.369 | Q-Q | 35.0.370 | Q-Q |
| 35.0.371 | Q-Q | 35.0.372 | Q-Q | 35.0.373 | Q-Q | 35.0.374 | Q-Q | 35.0.375 | Q-Q |
| 35.0.376 | Q-Q | 35.0.377 | Q-Q | 35.0.378 | Q-Q | 35.0.379 | Q-Q | 35.0.380 | Q-Q |
| 35.0.381 | Q-Q | 35.0.382 | Q-Q | 35.0.383 | Q-Q | 35.0.384 | Q-Q | 35.0.385 | Q-Q |
| 35.0.386 | Q-Q | 35.0.387 | Q-Q | 35.0.388 | Q-Q | 35.0.389 | Q-Q | 35.0.390 | Q-Q |
| 35.0.391 | Q-Q | 35.0.392 | Q-Q | 35.0.393 | Q-Q | 35.0.394 | Q-Q | 35.0.395 | Q-Q |
| 35.0.396 | Q-Q | 35.0.397 | Q-Q | 35.0.398 | Q-Q | 35.0.399 | Q-Q | 35.0.400 | Q-Q |
| 35.0.401 | Q-Q | 35.0.402 | Q-Q | 35.0.403 | Q-Q | 35.0.404 | Q-Q | 35.0.405 | Q-Q |
| 35.0.406 | Q-Q | 35.0.407 | Q-Q | 35.0.408 | Q-Q | 35.0.409 | Q-Q | 35.0.410 | Q-Q |
| 35.0.411 | Q-Q | 35.0.412 | Q-Q | 35.0.413 | Q-Q | 35.0.414 | Q-Q | 35.0.415 | Q-Q |
| 35.0.416 | Q-Q | 35.0.417 | Q-Q | 35.0.418 | Q-Q | 35.0.419 | Q-Q | 35.0.420 | Q-Q |
| 35.0.421 | Q-Q | 35.0.422 | Q-Q | 35.0.423 | Q-Q | 35.0.424 | Q-Q | 35.0.425 | Q-Q |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 35.0.426 | Q-Q | 35.0.427 | Q-Q | 35.0.428 | Q-Q | 35.0.429 | Q-Q | 35.0.430 | Q-Q |
| 35.0.431 | Q-Q | 35.0.432 | Q-Q | 35.0.433 | Q-Q | 35.0.434 | Q-Q | 35.0.435 | Q-Q |
| 35.0.436 | Q-Q | 35.0.437 | Q-Q | 35.0.438 | Q-Q | 35.1.1 | Q-Q | 35.2.1 | Q-Q |
| 35.3.1 | Q-Q | 35.4.1 | A | 35.5.1 | Q-Q | 35.6.1 | Q-Q | 35.7.1 | C |
| 35.8.1 | B | 35.9.1 | B | 35.10.1 | Q-Q | 35.11.1 | Q-Q | 35.12.1 | Q-Q |
| 35.12.2 | Q-Q | 35.12.3 | Q-Q | 35.12.4 | Q-Q | 35.13.1 | Q-Q | 35.13.2 | Q-Q |
| 35.14.1 | Q-Q | 35.15.1 | Q-Q | 35.15.2 | B | 35.15.3 | D | 35.16.1 | Q-Q |
| 35.17.1 | Q-Q | 35.18.1 | Q-Q | 35.19.1 | Q-Q | 35.19.2 | Q-Q | 35.20.1 | Q-Q |
| 35.21.1 | Q-Q | 35.21.2 | Q-Q | 35.21.3 | Q-Q | 35.22.1 | B | 35.22.2 | B |
| 35.23.1 | Q-Q | 35.23.2 | Q-Q | 35.24.1 | Q-Q | 35.25.1 | Q-Q | 35.25.2 | A |
| 35.26.1 | Q-Q | 35.27.1 | D | 35.27.2 | C | 35.28.1 | A | 35.28.2 | A;D |
| 35.28.3 | A | 35.28.4 | C | 35.28.5 | B | 35.28.6 | D | 35.28.7 | B |
| 35.28.8 | B | 35.28.9 | C | 35.28.10 | A | 35.28.11 | A | 35.28.12 | D |
| 35.28.13 | A | 35.28.14 | D | 35.28.15 | C | 35.28.16 | A | 35.28.17 | A |
| 35.28.18 | D | 35.28.19 | C | 35.28.20 | C | 35.28.21 | D | 35.28.22 | A |
| 35.28.23 | D | 35.28.24 | C | 35.28.25 | C | 35.28.26 | A | 35.28.27 | C |
| 35.28.28 | A | 35.28.29 | C | 35.28.30 | A | 35.28.31 | B | 35.28.32 | D |
| 35.28.33 | D | 35.29.1 | Q-Q | 35.29.2 | Q-Q | 35.30.1 | Q-Q | 35.31.1 | D |
| 35.32.1 | Q-Q | 35.33.1 | Q-Q | 35.34.1 | Q-Q | 35.35.1 | Q-Q | 35.36.1 | Q-Q |
| 35.36.2 | A | 35.36.3 | C | 35.37.1 | Q-Q | 35.37.2 | Q-Q | 35.38.1 | Q-Q |
| 35.39.1 | Q-Q | 35.39.2 | 2 | 35.40.1 | C | 35.41.1 | Q-Q | 35.42.1 | Q-Q |
| 35.43.1 | B | 35.43.2 | D | 35.44.1 | Q-Q | 35.45.1 | Q-Q | 35.46.1 | C |
| 35.47.1 | C | 35.48.1 | C | 35.48.2 | C | 35.48.3 | C | 35.48.4 | D |
| 35.48.5 | C | 35.48.6 | D | 35.49.1 | Q-Q | 35.50.1 | Q-Q | 35.51.1 | Q-Q |
| 35.52.1 | Q-Q | 35.52.2 | Q-Q | 35.53.1 | Q-Q | 35.54.1 | C | 35.55.1 | D |
| 35.56.1 | Q-Q | 35.56.2 | Q-Q | 35.57.1 | C | 35.58.1 | Q-Q | 35.59.1 | A |
| 35.60.1 | B | 35.61.1 | Q-Q | 35.62.1 | Q-Q | 35.63.1 | D | 35.64.1 | Q-Q |
| 35.65.1 | Q-Q | 35.65.2 | Q-Q | 35.65.3 | Q-Q | 35.66.1 | Q-Q | 35.66.2 | A |
| 35.66.3 | B | 35.67.1 | Q-Q | 35.68.1 | Q-Q | 35.68.2 | Q-Q | 35.68.3 | Q-Q |
| 35.68.4 | C | 35.69.1 | Q-Q | 35.70.1 | Q-Q | 35.70.2 | Q-Q | 35.70.3 | B |
| 35.70.4 | A | 35.70.5 | D | 35.71.1 | Q-Q | 35.71.2 | D | | |

# 36 Programming and DS (27)

## 36.1 Array (2) top

### 36.1.1 Array: UGC NET CSE | December 2014 | Part 2 | Question: 14 top

When an array is passed as parameter to a function, which of the following statements is correct ?

A. The function can change values in the original array.
B. In $C$, parameters are passed by value, the function cannot change the original value in the array.
C. It results in compilation error when the function tries to access the elements in the array.
D. Results in a run time error when the function tries to access the elements in the array.

ugcnetcse-dec2014-paper2 programming-in-c array

Answer key

### 36.1.2 Array: UGC NET CSE | June 2013 | Part 3 | Question: 32 top

Arrays in C language can have ____ with reference to memory representation.

A. n-subscripts
B. two-subscripts
C. only one subscript
D. three subscripts only

ugcnetcse-june2013-paper3 programming-in-c array

Answer key

## 36.2 Array Of Pointers (1) top

### 36.2.1 Array Of Pointers: UGC NET CSE | August 2016 | Part 2 | Question: 12 top

The following $'C'$ statement :

int * f[]()

declares :

A. A function returning a pointer to an array of integers.
B. Array of functions returning pointers to integers.
C. A function returning an array of pointers to integers.
D. An illegal statement.

ugcnetcse-aug2016-paper2 programming-in-c array-of-pointers pointers

Answer key

## 36.3 Dangling Pointers (1) top

### 36.3.1 Dangling Pointers: UGC NET CSE | September 2013 | Part 3 | Question: 65 top

Consider the following sequence of operations:

- Pointer p1 is set to point at a new heap-dynamic variable.
- Pointer p2 is assigned p1's value
- The heap dynamic variable pointed to by p1 is explicitly de-allocated but p2 is not changed by the operation

This situation leads to which of the following:

A. p1 becomes a dangling pointer
B. p2 becomes a dangling pointer
C. Both p1 and p2 are now dangling pointers
D. Neither p1 nor p2 is now a dangling pointer

ugcnetcse-sep2013-paper3 programming-in-c dangling-pointers

## 36.4 Data Types (1) top

### 36.4.1 Data Types: UGC NET CSE | December 2011 | Part 2 | Question: 33 top

If an integer needs two bytes of storage, then the maximum value of unsigned integer is

A. $2^{16}-1$ B. $2^{15}-1$ C. $2^{16}$ D. $2^{15}$

ugcnetcse-dec2011-paper2 programming-in-c data-types

Answer key

## 36.5 Input Output Statement (1) top

### 36.5.1 Input Output Statement: UGC NET CSE | December 2009 | Part 2 | Question: 12 top

What would be the output of the following program, if run from the command line as “myprog 1 2 3” ?

```
main (int argc, char * argv[ ])
  { int i ;
    i = argv[1] + argv[2] + argv[3] ;
     printf (“% d”, i) ;
  }
```

(A) 123

(B) 6

(C) Error

(D) “123”

ugcnetcse-dec2009-paper2 programming-in-c input-output-statement

Answer key

## 36.6 Operator Precedence (2) top

### 36.6.1 Operator Precedence: UGC NET CSE | December 2010 | Part 2 | Question: 12 top

The value of the following expression $(13/4*3)$ is

A. $5.75$ B. $2.95$ C. $1.4875$ D. $5$

ugcnetcse-dec2010-paper2 programming-in-c operator-precedence

Answer key

### 36.6.2 Operator Precedence: UGC NET CSE | December 2011 | Part 2 | Question: 36 top

$X-=Y+1$ means

A. $X=X-Y+1$
B. $X=-X-Y-1$
C. $X=-X+Y+1$
D. $X=X-Y-1$

ugcnetcse-dec2011-paper2 programming-in-c operator-precedence

Answer key

## 36.7 Operators (2) top

### 36.7.1 Operators: UGC NET CSE | December 2012 | Part 2 | Question: 45 top

What is the result of the following expression?
(1 & 2) + (3 & 4)

A. 1 B. 3 C. 2 D. 0

ugcnetcse-dec2012-paper2 programming-in-c operators

Answer key

### 36.7.2 Operators: UGC NET CSE | June 2010 | Part 2 | Question: 11 top

The statement print

f (" % d", 10 ? 0 ? 5 : 1 : 12);

will print

A. $10$ B. $0$ C. $12$ D. $1$

ugcnetcse-june2010-paper2 programming-in-c operators

Answer key

## 36.8 Parameter Passing (1) top

### 36.8.1 Parameter Passing: UGC NET CSE | December 2012 | Part 3 | Question: 44 top

The Default Parameter Passing Mechanism is called as

A. Call by Value
B. Call by Reference
C. Call by Address
D. Call by Name

ugcnetcse-dec2012-paper3 programming-in-c parameter-passing

Answer key

## 36.9 Pointer Declaration (1) top

### 36.9.1 Pointer Declaration: UGC NET CSE | September 2013 | Part 3 | Question: 51 top

Consider the following two function declarations:

int *f()

int (*f)()

Which of the following is true?

A. Both are identical
B. The first is a correct declaration and the second is wrong
C. Both are different ways of declaring pointer to a function
D. The first declaration is a function returning a pointer to an integer and the second is a pointer to function returning integer

ugcnetcse-sep2013-paper3 programming-in-c pointer-declaration

Answer key

## 36.10 Programming In C (13) top

### 36.10.1 Programming In C: UGC NET CSE | August 2016 | Part 2 | Question: 11 top

Given $i = 0, j = 1, k = -1, x = 0.5, y = 0.0$

What is the output of given '$C'$ expression?

x * 3 & & 3 || j | k

A. $-1$ B. $0$ C. $1$ D. $2$

ugcnetcse-aug2016-paper2 programming-in-c

Answer key

### 36.10.2 Programming In C: UGC NET CSE | December 2010 | Part 2 | Question: 11 top

How many of the following declarations are correct ?

int $z = 7.0$;

double void = $0.000$;

short array $[2] = 0, 1, 2$;

char c = “\n”;

A. None
B. One is correct
C. Two are correct
D. All four are correct

ugcnetcse-dec2010-paper2 programming-in-c

Answer key

## 36.10.3 Programming In C: UGC NET CSE | December 2010 | Part 2 | Question: 13 top

Which one of the following will set the value of $y$ to $5$ if $x$ has the value $3$, but not otherwise ?

A. If $(x = 3)y = 5$
B. If $x == 3(y = 5)$
C. If $(x == 3); y = 5$
D. If $(x == 3)y = 5$

ugcnetcse-dec2010-paper2 programming-in-c

Answer key

## 36.10.4 Programming In C: UGC NET CSE | December 2015 | Part 2 | Question: 11 top

Consider the following program:

```
#include<stdio.h>
main()
{
  int i, inp;
  float x, term=1, sum=0;
  scanf("%d %f", &inp, &x);
  for(i=1;i<=inp;i++)
  {
     term=term*x/i;
     sum=sum+term;
  }
  printf("Result=%f\n", sum);
}
```

The program computes the sum of which of the following series?

A. $x + x^2/2 + x^3/3 + x^4/4 + \ldots$
B. $x + x^2/2! + x^3/3! + x^4/4! + \ldots$
C. $1 + x^2/2 + x^3/3 + x^4/4 + \ldots$
D. $1 + x^2/2! + x^3/3! + x^4/4! + \ldots$

ugcnetcse-dec2015-paper2 programming-in-c

Answer key

## 36.10.5 Programming In C: UGC NET CSE | December 2015 | Part 3 | Question: 43 top

A horn clause is

A. A clause in which no variables occur in the expression
B. A clause that has at least one negative literal
C. A disjunction of a number of literals
D. A clause that has atmost one positive literal

programming-in-c ugcnetcse-dec2015-paper3

Answer key

## 36.10.6 Programming In C: UGC NET CSE | June 2007 | Part 2 | Question: 14 top

What is the output of the following ’C’ program?

```
main()
{
  printf(“%x”,-1>>4);
}
```

A. ffff
B. 0fff
C. 0000
D. fff0

ugcnetcse-june2007-paper2 programming-in-c

Answer key

## 36.10.7 Programming In C: UGC NET CSE | June 2013 | Part 3 | Question: 33 top

Refer the points as listed below:

a. What are the operato b. What are the rules? c. What is the order of d. What are the restrictions on operand evaluations side ef

Which of the above must be considered as primary design issues for arithmetic expressions?

A. a, b and c
B. a, c and d
C. a, b and d
D. a, b, c and d

ugcnetcse-june2013-paper3 programming-in-c

Answer key

## 36.10.8 Programming In C: UGC NET CSE | June 2013 | Part 3 | Question: 51 top

Trace the error:

```
void main()
{
int *b, &a;
*b=20;
printf("%d, %d", a, *b)
}
```

A. No error
B. Logical error
C. Syntax error
D. Semantic error

ugcnetcse-june2013-paper3 programming-in-c

Answer key

## 36.10.9 Programming In C: UGC NET CSE | October 2020 | Part 2 | Question: 9 top

Consider the following pseudo-code fragment, where $a$ and $b$ are integer variables that have been initialized:

/* Pre-conditions : $(a > 1 \wedge a < b)$ */

/* Assume that overflow never occurs */

int $x = 0$; int $p = 1$;

while $(p < b)\{$

$p = p * a$;

$x = x + 1$;

$\}$

When the while loop terminates, what will be the value of $x$ in terms of $a$ and $b$?

A. $a^b$
B. $b^a$
C. $\lfloor \log_a^b \rfloor$ /* $\lfloor \ \rfloor$ means floor */
D. $\lfloor \log_a^b \rfloor$ /* $\lceil \ \rceil$ means ceil */

ugcnetcse-oct2020-paper2 programming-in-c

Answer key

## 36.10.10 Programming In C: UGC NET CSE | September 2013 | Part 2 | Question: 33 top

What is the size of the following union? Assume that the size of int=2, size of float =4, size of char=1

```
union tag {
int a;
float b;
char c;
};
```

A. 2
B. 4
C. 1
D. 7

ugcnetsep2013ii programming-in-c

Answer key

### 36.10.11 Programming In C: UGC NET CSE | September 2013 | Part 2 | Question: 34 top

What is the output of the following program segment?

```
sum(n)
{
if (n<1) return n;
else return (n+sum(n-1));
}
main()
{
printf("%d", sum(5));
}
```

A. 10 B. 16 C. 15 D. 14

ugcnetsep2013ii programming-in-c

Answer key

### 36.10.12 Programming In C: UGC NET CSE | September 2013 | Part 2 | Question: 36 top

Consider the following program segment:

```
d=0;
for(i=1; i<31, ++i)
for (j=1; j < 31; ++j)
for (k=1; k < 31; ++k)
if((i+j+k%3)==0))
d=d+1;
printf("%d", d);
```

The output will be

A. 9000 B. 3000 C. 90 D. 2700

ugcnetsep2013ii programming-in-c

Answer key

### 36.10.13 Programming In C: UGC NET CSE | September 2013 | Part 3 | Question: 53 top

What is the output of the following program?

```
#include<stdio.h>
main()
{
int a, b =0;
static int c[10]={1, 2, 3, 4, 5, 6, 7, 8, 9, 0};
for (a=0; a<10; ++a)
int ((c[a]%2)==0) b+=c[a];
printf("%d", b);
}
```

A. 15 B. 25 C. 45 D. 20

ugcnetcse-sep2013-paper3 programming-in-c

Answer key

## 36.11 Storage Classes In C (1) top

### 36.11.1 Storage Classes In C: UGC NET CSE | January 2017 | Part 2 | Question: 13 top

Which of the following storage classes have global visibility in $C/C++$?

A. Auto B. Extern C. Static D. Register

ugcnetjan2017ii programming-in-c storage-classes-in-c

Answer key

## 36.12 Three Dimensional Array (1) top

### 36.12.1 Three Dimensional Array: UGC NET CSE | December 2015 | Part 2 | Question: 16 top

A three dimensional array in 'C' is declared as int A[x][y][z]. Here, the address of an item at the location A[p][q][r] can be computed as follows: (where w is the word length of an integer)

A. &A[0][0][0]+w(y*z*q+z*p+r)
B. &A[0][0][0]+w(y*z*p+z*q+r)
C. &A[0][0][0]+w(x*y*p+z*q+r)
D. &A[0][0][0]+w(x*y*q+z*p+r)

ugcnetcse-dec2015-paper2 programming-in-c three-dimensional-array

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 36.1.1 | A | 36.1.2 | C | 36.2.1 | Q-Q | 36.3.1 | B | 36.4.1 | A |
| 36.5.1 | Q-Q | 36.6.1 | Q-Q | 36.6.2 | D | 36.7.1 | D | 36.7.2 | Q-Q |
| 36.8.1 | A | 36.9.1 | D | 36.10.1 | Q-Q | 36.10.2 | Q-Q | 36.10.3 | Q-Q |
| 36.10.4 | B | 36.10.5 | B | 36.10.6 | Q-Q | 36.10.7 | D | 36.10.8 | C |
| 36.10.9 | X | 36.10.10 | B | 36.10.11 | C | 36.10.12 | C | 36.10.13 | D |
| 36.11.1 | B | 36.12.1 | B | | | | | | |

### 37.0.1 UGC NET CSE | December 2006 | Part 2 | Question: 25 top

Which one of the following is a physical data structure ?

A. Array B. Linked lists C. Stacks D. Tables

ugcnetcse-dec2006-paper2

Answer key

### 37.0.2 UGC NET CSE | December 2004 | Part 2 | Question: 32 top

Which of the following is not collision resolution technique?

A. Hash addressing B. Chaining C. Both (A) and (B) D. Indexing

ugcnetcse-dec2004-paper2

Answer key

### 37.0.3 UGC NET CSE | December 2004 | Part 2 | Question: 21 top

What item is at the root after the following sequence of insertions into an empty splay tree :
$1, 11, 3, 10, 8, 4, 6, 5, 7, 9, 2, ?$

A. $1$ B. $2$ C. $4$ D. $8$

ugcnetcse-dec2004-paper2

Answer key

### 37.0.4 UGC NET CSE | December 2006 | Part 2 | Question: 11 top

When a function is recursively called, all automatic variables :

A. are initialized during each execution of the function
B. are retained from the last execution
C. are maintained in a stack
D. are ignored

ugcnetcse-dec2006-paper2

Answer key

### 37.0.5 UGC NET CSE | June 2008 | Part 2 | Question: 21 top

**Which of the following data structures is most efficient in terms of both space and time to reverse a string of characters?**

**(A) Linked list** **(B) Stack**
**(C) Array** **(D) Tree**

ugcnetcse-june2008-paper2

Answer key

### 37.0.6 UGC NET CSE | December 2007 | Part 2 | Question: 23 top

The height of a binary tree with $n$ nodes, in the worst case is :

A. $O(logn)$
B. $O(n)$
C. $\Omega(n \log n)$
D. $\Omega(n^2)$

ugcnetcse-dec2007-paper2

Answer key

## 37.0.7 UGC NET CSE | December 2007 | Part 2 | Question: 22 top

Which of the following data structure is used to implement recursion ?

A. Arrays
B. Stacks
C. Queues
D. Linked lists

ugcnetcse-dec2007-paper2

Answer key

## 37.0.8 UGC NET CSE | December 2007 | Part 2 | Question: 21 top

Consider a rooted tree in which every node has at least three children. What is the minimum number of nodes at level i (i > $0$) of the tree ? Assume that the root is at level $0$:

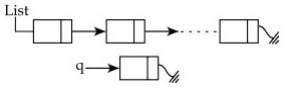
A. $3^i$
B. $3i$
C. $3$
D. $3i+1$

ugcnetcse-dec2007-paper2

Answer key

## 37.0.9 UGC NET CSE | December 2007 | Part 2 | Question: 12 top

Consider the following linked list :




Which of the following piece of code will insert the node pointed to by $q$ at the end of the list ?

A.
$$\text{for (p=list; p !=NULL; p=p} \rightarrow \text{next);}$$
$$p = q;$$

B.
$$\text{for (p=list; p !=NULL; p=p} \rightarrow \text{next);}$$
$$\text{p}\rightarrow\text{next=q;}$$

C.
$$\text{for (p=list; p}\rightarrow\text{next !=NULL; p=p} \rightarrow \text{next);}$$
$$p = q;$$

D.
$$\text{for (p=list; p}\rightarrow\text{next !=NULL; p=p} \rightarrow \text{next);}$$
$$p \rightarrow next = q;$$

ugcnetcse-dec2007-paper2

Answer key

## 37.0.10 UGC NET CSE | June 2009 | Part 2 | Question: 24 top

In a B tree of order m with p nodes the average number of splits is at most :

A. 1/(⌈m/2⌉–1)
B. ⌈m/2⌉–1
C. 1/(m/2)
D. None

ugcnetcse-june2009-paper2

Answer key

## 37.0.11 UGC NET CSE | June 2009 | Part 2 | Question: 28 top

A binary tree is said to have heap property if the elements along any path :

A. from leaf to root are non-increasing
B. from leaf to root are non-decreasing
C. from root to leaf are non-decreasing
D. from root to leaf are non-increasing

ugcnetcse-june2009-paper2

Answer key

### 37.0.12 UGC NET CSE | December 2004 | Part 2 | Question: 22 top

Suppose we are implementing quadratic probing with a Hash function, Hash $(y) = X$ mode $100$. If an element with key $4594$ is inserted and the first three locations attempted are already occupied, then the next cell that will be tried is :

A. $2$ B. $3$ C. $9$ D. $97$

ugcnetcse-dec2004-paper2

Answer key

### 37.0.13 UGC NET CSE | December 2006 | Part 2 | Question: 24 top

The equivalent postfix expression for $d/(e+f)+b*c$ :

1. $defbc/++*$
2. $def+/bc+*$
3. $def+/bc*+$
4. None of these

ugcnetcse-dec2006-paper2

Answer key

### 37.0.14 UGC NET CSE | December 2004 | Part 2 | Question: 24 top

What operation is supported in constant time by the doubly linked list, but not by the singly linked list ?

A. Advance B. Backup C. First D. Retrieve

ugcnetcse-dec2004-paper2

Answer key

## 37.1 Avl Tree (1) top

### 37.1.1 Avl Tree: UGC NET CSE | December 2012 | Part 2 | Question: 2 top

The worst case time complexity of AVL is tree is better in comparison to binary search tree for

A. Search and Insert Operations
B. Search and Delete Operations
C. Insert and Delete Operations
D. Search, Insert and Delete Operations

data-structures binary-tree ugcnetcse-dec2012-paper2 avl-tree

Answer key

## 37.2 B And Bplus Trees (1) top

### 37.2.1 B And Bplus Trees: UGC NET CSE | June 2010 | Part 2 | Question: 25 top

In a $B$ tree of order $5$, the following keys are inserted as follows : $7, 8, 1, 4, 13, 20, 2, 6$ and $5$ How many elements are present in the root of the tree ?

A. $1$ B. $2$ C. $3$ D. $4$

ugcnetcse-june2010-paper2 data-structures b-and-bplus-trees

Answer key

## 37.3 B Tree (1) top

### 37.3.1 B Tree: UGC NET CSE | December 2012 | Part 2 | Question: 34 top

The maximum number of keys stored in a B-tree of order $m$ and depth $d$ is

A. $m^{d+1} - 1$
B. $\frac{m^{d+1}-1}{m-1}$
C. $(m-1)(m^{d+1}-1)$
D. $\frac{m^d-1}{m-1}$

ugcnetcse-dec2012-paper2 b-tree databases

Answer key

## 37.4 Binary Heap (1) top

### 37.4.1 Binary Heap: UGC NET CSE | October 2020 | Part 2 | Question: 24 top

In a binary max heap containing $n$ numbers, the smallest element can be found in _____

A. $O(n)$
B. $O(\log_2 n)$
C. $O(1)$
D. $O(\log_2 \log_2 n)$

ugcnetcse-oct2020-paper2 data-structures binary-heap

Answer key

## 37.5 Binary Search Tree (5) top

### 37.5.1 Binary Search Tree: UGC NET CSE | August 2016 | Part 2 | Question: 23 top

The runtime for traversing all the nodes of a binary search tree with $n$ nodes and printing them in an order is

A. $O(\lg n)$
B. $O(n \lg n)$
C. $O(n)$
D. $O(n^2)$

ugcnetcse-aug2016-paper2 data-structures binary-search-tree

Answer key

### 37.5.2 Binary Search Tree: UGC NET CSE | July 2018 | Part 2 | Question: 26 top

A binary search tree in which every non-leaf node has non-empty left and right subtrees is called a strictly binary tree. Such a tree with 19 leaves:

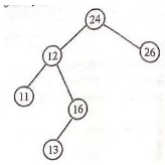
A. cannot have more than 37 nodes
B. has exactly 37 nodes
C. has exactly 35 nodes
D. cannot have more than 35 nodes

ugcnetcse-july2018-paper2 data-structures binary-search-tree

Answer key

### 37.5.3 Binary Search Tree: UGC NET CSE | June 2016 | Part 2 | Question: 21 top

Consider the following binary search tree:




If we remove the root node which of the node from the left subtree will be the new root?

A. 11
B. 12
C. 13
D. 16

data-structures binary-tree binary-search-tree ugcnetcse-june2016-paper2

Answer key

### 37.5.4 Binary Search Tree: UGC NET CSE | June 2016 | Part 3 | Question: 35 top

Suppose that we have numbers between 1 and 1,000 in a binary search tree and want to search for the number 364. Which of the following sequences could not be the sequence of nodes examined?

A. 925, 221, 912, 245, 899, 259, 363, 364
B. 3, 400, 388, 220, 267, 383, 382, 279, 364
C. 926, 203, 912, 241, 913, 246, 364
D. 3, 253, 402, 399, 331, 345, 398, 364

ugcnetcse-june2016-paper3 data-structures binary-search-tree

Answer key

### 37.5.5 Binary Search Tree: UGC NET CSE | September 2013 | Part 3 | Question: 41 top

Given a binary search trees for a set of $n = 5$ keys with the following probabilities :

| i | 0 | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| $p_i$ | - | 0.15 | 0.10 | 0.05 | 0.10 | 0.20 |
| $q_i$ | 0.05 | 0.10 | 0.05 | 0.05 | 0.05 | 0.10 |

The expected optimal cost of the search is

A. $2.65$ B. $2.70$ C. $2.75$ D. $2.80$

ugcnetcse-sep2013-paper3 data-structures binary-search-tree

Answer key

## 37.6 Binary Tree (7) top

### 37.6.1 Binary Tree: UGC NET CSE | December 2009 | Part 2 | Question: 21 top

If the number of leaves in a strictly binary tree is an odd number, then what can you say with full conviction about total number of nodes in the tree ?
(A) It is an odd number.
(B) It is an even number.
(C) It cannot be equal to the number of leaves.
(D) It is always greater than twice the number of leaves.

ugcnetcse-dec2009-paper2 data-structures binary-tree

Answer key

### 37.6.2 Binary Tree: UGC NET CSE | June 2009 | Part 2 | Question: 27 top

In a full binary tree of height k, there are _____ internal nodes .

A. 2k-1
B. 2k-1
C. 2k
D. 2k+1

ugcnetcse-june2009-paper2 data-structures binary-tree

Answer key

### 37.6.3 Binary Tree: UGC NET CSE | June 2012 | Part 2 | Question: 27 top

The Inorder traversal of the tree will yield a sorted listing of elements of tree in

A. Binary tree
B. Binary search tree
C. Heaps
D. None of the above

data-structures binary-tree ugcnetcse-june2012-paper2

Answer key

### 37.6.4 Binary Tree: UGC NET CSE | June 2012 | Part 2 | Question: 8 top

A binary search tree is a binary tree in which

A. All items in the left subtree are less than root
B. All items in the right subtree are greater than or equal to root
C. Each subtree is itself a binary search tree
D. All of the above

ugcnetcse-june2012-paper2 data-structures binary-tree

Answer key

### 37.6.5 Binary Tree: UGC NET CSE | October 2020 | Part 2 | Question: 23 top

A complete $n$-ary tree is a tree in which each node has $n$ children or no children. Let $I$ be the number of internal nodes and $L$ be the number of leaves in a complete $n$-ary tree. If $L = 41$, and $I = 10$, what is the value of $n$?

A. $3$ B. $4$ C. $5$ D. $6$

ugcnetcse-oct2020-paper2 data-structures binary-tree

Answer key

### 37.6.6 Binary Tree: UGC NET CSE | September 2013 | Part 2 | Question: 11 top

The min. number of nodes in a binary tree of depth d (root at level 0) is

A. $(2^d + 1)$ B. $(2^{(d+1)} - 1)$ C. $d$ D. $d + 1$

binary-tree data-structures ugcnetsep2013ii

Answer key

### 37.6.7 Binary Tree: UGC NET CSE | September 2013 | Part 2 | Question: 21 top

Consider the In-order and Post-order traversals of a tree as given below:

In-order: j e n k o p b f a c l g m d h i

Post-order: j n o p k e f b c l m g h l d a

The Pre-order traversal of the tree shall be

A. a b f e j k n o p c d g l m h i
B. a b c d e f j k n o p g l m h i
C. a b e j k n o p f c d g l m h i
D. j e n o p k f b c l m g h l d a

ugcnetsep2013ii data-structures binary-tree

Answer key

## 37.7 Breadth First Search (1) top

### 37.7.1 Breadth First Search: UGC NET CSE | October 2020 | Part 2 | Question: 63 top

Which of the following statements are true?

a. Minimax search is breadth first, i.e. processes all the nodes at a given level before moving to the next level.
b. The efficiency of the alpha-beta pruning algorithm depends on the order in which the nodes are examined.
c. Choose the correct answer from the options given below:

A. $(a)$ and $(c)$ only B. $(a)$ and $(d)$ only C. $(b)$ and $(c)$ only D. $(c)$ and $(d)$ only

ugcnetcse-oct2020-paper2 data-structures breadth-first-search

Answer key

## 37.8 Cryptography (1) top

### 37.8.1 Cryptography: UGC NET CSE | January 2017 | Part 2 | Question: 24 top

If $h$ is chosen from a universal collection of hash functions and is used to hash $n$ keys into a table of size $m$, where $n \leq m$, the expected number of collisions involving a particular key $x$ is less than _____.

A. $1$ B. $1/n$ C. $1/m$ D. $n/m$

ugcnetjan2017ii cryptography hashing data-structures

Answer key

## 37.9 Data Structures (7) top

## 37.9.1 Data Structures: UGC NET CSE | December 2011 | Part 2 | Question: 1 top

Which of the following data structure is Non-linear type ?

A. Strings B. Lists C. Stacks D. None of the above

ugcnetcse-dec2011-paper2 data-structures

Answer key

## 37.9.2 Data Structures: UGC NET CSE | June 2012 | Part 2 | Question: 49 top

Which of the following data structure is linear type?

A. Strings B. Lists C. Queues D. All of the above

data-structures ugcnetcse-june2012-paper2

Answer key

## 37.9.3 Data Structures: UGC NET CSE | June 2012 | Part 2 | Question: 50 top

To represent hierarchical relationship between elements, which data structure is suitable?

A. Dequeue B. Priority C. Tree D. All of the above

data-structures ugcnetcse-june2012-paper2

Answer key

## 37.9.4 Data Structures: UGC NET CSE | June 2013 | Part 3 | Question: 49 top

Suppose you want to delete the name that occurs before 'Vivek' in an alphabetical listing. Which one of the following data structures shall be most efficient for this operation?

A. Circular linked list
B. Doubly linked list
C. Linked list
D. Dequeue

ugcnetcse-june2013-paper3 data-structures

Answer key

## 37.9.5 Data Structures: UGC NET CSE | June 2016 | Part 2 | Question: 2 top

The number of different spanning trees in complete graph, $K_4$ and bipartite graph, $K_{2,2}$ have ____ and ___ respectively.

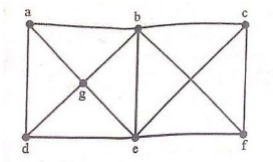
A. 14, 14 B. 16, 14 C. 16, 4 D. 14, 4

ugcnetcse-june2016-paper2 data-structures graph-theory

Answer key

## 37.9.6 Data Structures: UGC NET CSE | June 2016 | Part 2 | Question: 5 top

A clique in a simple undirected graph is a complete subgraph that is not contained in any larger complete subgraph. How many cliques are there in a graph shown below?




A. 2 B. 4 C. 5 D. 6

ugcnetcse-june2016-paper2 data-structures graph-theory

Answer key

### 37.9.7 Data Structures: UGC NET CSE | September 2013 | Part 3 | Question: 15 top

Which of the following is the minimum cost for an assignment problem given below?

| | | | A | B | C | D |
|---|---|---|---|---|---|---|
| | | I | 5 | 3 | 2 | 8 |
| Jobs | Workers | II | 7 | 9 | 2 | 6 |
| | | III | 6 | 4 | 5 | 7 |
| | | IV | 5 | 7 | 7 | 8 |

A. $13$ B. $16$ C. $17$ D. $18$

ugcnetcse-sep2013-paper3 data-structures

Answer key

## 37.10 Graph Algorithms (1) top

### 37.10.1 Graph Algorithms: UGC NET CSE | July 2018 | Part 2 | Question: 24 top

Which of the following algorithms solves the single-source shortest paths?

A. Prim's algorithm
B. Floys-Warshall algorithm
C. Johnson's algorithm
D. Dijkstra's algorithm

ugcnetcse-july2018-paper2 data-structures graph-algorithms

Answer key

## 37.11 Graph Connectivity (1) top

### 37.11.1 Graph Connectivity: UGC NET CSE | September 2013 | Part 2 | Question: 20 top

Consider the following statements:

I. A graph in which there is a unique path between every pair of vertices is a tree.
II. A connected graph with e=v-1 is a tree
III. A connected graph with e=v-1 that has no circuit is a tree

Which one of the above statements is/are true?

A. I and III B. II and III C. I and II D. All of the above

graph-connectivity ugcnetsep2013ii

Answer key

## 37.12 Hashing (11) top

### 37.12.1 Hashing: UGC NET CSE | August 2016 | Part 3 | Question: 32 top

Consider a hash table of size $m = 10000$, and the hash function $h(K) = floor(m(KA \bmod 1))$ for $A = (\sqrt{5}-1)/2$. The key $123456$ is mapped to location _____.

A. $46$ B. $41$ C. $43$ D. $48$

ugcnetcse-aug2016-paper3 data-structures hashing

Answer key

### 37.12.2 Hashing: UGC NET CSE | December 2009 | Part 2 | Question: 25 top

A hash function f defined as f(key) = key mod 7, with linear probing used to resolve collisions. Insert the keys 37, 38, 72, 48, 98 and 11 into the table indexed from 0 to 6.

What will be the location of 11 ?

(A) 3

(B) 4

(C) 5

(D) 6

ugcnetcse-dec2009-paper2 data-structures hashing

Answer key

### 37.12.3 Hashing: UGC NET CSE | December 2011 | Part 2 | Question: 6 top

A hash table has space for $75$ records, then the probability of collision before the table is $6\%$ full.

A. $.25$ B. $.20$ C. $.35$ D. $.30$

ugcnetcse-dec2011-paper2 data-structures hashing

Answer key

### 37.12.4 Hashing: UGC NET CSE | December 2012 | Part 2 | Question: 26 top

A hash function $f$ defined as $f(key) = key \mod 13$, with linear probing is used to insert keys 55, 58, 68, 91, 27, 145. What will be the location of 79?

A. 1 B. 2 C. 3 D. 4

ugcnetcse-dec2012-paper2 data-structures hashing

Answer key

### 37.12.5 Hashing: UGC NET CSE | December 2015 | Part 2 | Question: 35 top

The hash function used in double hashing is of the form:

A. $h(k,i) = (h_1(k) + h_2(k) + i) \, mod \, m$
B. $h(k,i) = (h_1(k) + h_2(k) - i) \, mod \, m$
C. $h(k,i) = (h_1(k) + i \, h_2(k)) \, mod \, m$
D. $h(k,i) = (h_1(k) - i \, h_2(k)) \, mod \, m$

ugcnetcse-dec2015-paper2 data-structures hashing

Answer key

### 37.12.6 Hashing: UGC NET CSE | July 2018 | Part 2 | Question: 23 top

A hash function h defined h(key)=key mod 7, with linear probing, is used to insert the keys 44, 45, 79, 55, 91, 18, 63 into a table indexed from 0 to 6. What will be the location of key 18?

A. 3 B. 4 C. 5 D. 6

ugcnetcse-july2018-paper2 data-structures hashing

Answer key

### 37.12.7 Hashing: UGC NET CSE | July 2018 | Part 2 | Question: 70 top

Consider a hash table of sze seven, with starting index zero, and a hash function (7x+3) mod 4. Assuming that the hash table is initially empty, which of the following is the contents of the table when the sequence 1, 3, 8, 10 is inserted into the table using closed hashing? Here "____" denotes an empty location in the table.

A. 3, 10, 1, 8, ___ , ____ , ____
B. 1, 3, 8, 10, ___, ___, ___
C. 1, ___, 3, ___, 8, ___, 10
D. 3, 10, ___, ____, 8, ___, ___

ugcnetcse-july2018-paper2 data-structures hashing

Answer key

### 37.12.8 Hashing: UGC NET CSE | June 2010 | Part 2 | Question: 24 top

A chained hash table has an array size of $100$. What is the maximum number of entries that can be placed in the table ?

A. $100$
B. $200$
C. $10000$
D. There is no upper limit

ugcnetcse-june2010-paper2 data-structures hashing

Answer key

### 37.12.9 Hashing: UGC NET CSE | June 2014 | Part 2 | Question: 38 top

Searching for an element in the hash table requires $O(1)$ time for the _____time, whereas for direct addressing it holds for the _____ time.

A. worst-case, average
B. worst-case, worst-case
C. average, worst-case
D. best, average

ugcnetcse-june2014-paper2 hashing data-structures

Answer key

### 37.12.10 Hashing: UGC NET CSE | June 2014 | Part 3 | Question: 64 top

If $h$ is chosen from a universal collection of hash functions and is used to hash $n$ keys into a table of size $m$, where $n \leq m$, the expected number of collisions involving a particular key $K$ is

A. Less than $1$
B. Less than $lgn$
C. Greater than $1$
D. Greater than $lgn$

ugcnetjune2014iii data-structures hashing

Answer key

### 37.12.11 Hashing: UGC NET CSE | Junet 2015 | Part 3 | Question: 34 top

Consider a hash table of size m=100 and the hash function h(k)=floor (m(kA mod 1)) for $A = \frac{(\sqrt{5}-1)}{2} = 0.618033$. Compute the location to which the key k=123456 is placed in hash table

A. 77
B. 82
C. 88
D. 89

ugcnetcse-june2015-paper3 data-structures hashing

Answer key

## 37.13 Heap (6) top

### 37.13.1 Heap: UGC NET CSE | December 2008 | Part 2 | Question: 33 top

In a heap, every element is _____ of all the elements in the subtree.

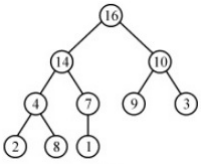
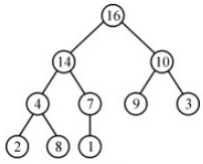
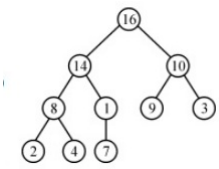
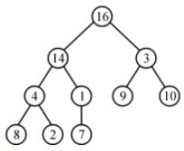
A. maximum
B. minimum
C. sum
D. product

ugcnetcse-dec2008-paper2 data-structures heap

Answer key

### 37.13.2 Heap: UGC NET CSE | January 2017 | Part 2 | Question: 23 top

Which of the following is a valid heap?

a. 
b. 
c. 
d. 

A. $a$
B. $b$
C. $c$
D. $d$

ugcnetjan2017ii data-structures heap

Answer key

### 37.13.3 Heap: UGC NET CSE | July 2018 | Part 2 | Question: 22 top

Consider the array A=<4, 1, 3, 2, 16, 9, 10, 14, 8, 7>. After building heap from the array A, the depth of the heap and the right child of max-heap are _____ and _____ respectively (Root is at level 0).

A. 3, 14 B. 3, 10 C. 4, 14 D. 4, 10

ugcnetcse-july2018-paper2 data-structures heap

Answer key

### 37.13.4 Heap: UGC NET CSE | June 2013 | Part 3 | Question: 13 top

In any n-element heap, the number of nodes of height h is,

A. less than equal to $\left\lceil \frac{n}{2^h} \right\rceil$

B. greater than $\left\lceil \frac{n}{2^h} \right\rceil$

C. greater than $\left\lceil \frac{n}{2^h+1} \right\rceil$

D. less than equal to $\left\lceil \frac{n}{2^h+1} \right\rceil$

ugcnetcse-june2013-paper3 data-structures heap

Answer key

### 37.13.5 Heap: UGC NET CSE | Junet 2015 | Part 3 | Question: 36 top

The number of nodes in height h in any n-element heap is

A. $h$

B. $z^h$

C. ceil $\left(\frac{n}{z^h}\right)$

D. ceil $\left(\frac{n}{z^{h+1}}\right)$

ugcnetcse-june2015-paper3 data-structures heap

Answer key

### 37.13.6 Heap: UGC NET CSE | November 2017 | Part 3 | Question: 20 top

Heap allocation is required for languages that

A. Use dynamic scope rules

B. Support dynamic data structures

C. Support recursion

D. Support recursion and dynamic data structures

ugcnetcse-nov2017-paper3 data-structures heap

Answer key

## 37.14 Heap Sort (1) top

### 37.14.1 Heap Sort: UGC NET CSE | June 2013 | Part 2 | Question: 28 top

The time complexity to build a heap with a list of n numbers is

A. O(log n) B. O(n) C. O(n logn) D. O($n^2$)

heap-sort ugcnetcse-june2013-paper2

Answer key

## 37.15 Infix Prefix (1) top

### 37.15.1 Infix Prefix: UGC NET CSE | August 2016 | Part 2 | Question: 25 top

Given the following prefix expression :

$* + 3 + 3 \uparrow 3 + 333$

What is the value of the prefix expression ?

A. $2178$ B. $2199$ C. $2205$ D. $2232$

ugcnetcse-aug2016-paper2 data-structures infix-prefix

Answer key

## 37.16 Linked List (2) top

### 37.16.1 Linked List: UGC NET CSE | August 2016 | Part 2 | Question: 21 top

Consider an implementation of unsorted single linked list. Suppose it has its representation with a head and a tail pointer (i.e. pointers to the first and last nodes of the linked list). Given the representation, which of the following operation can not be implemented in $O(1)$ time ?

A. Insertion at the front of the linked list.
B. Insertion at the end of the linked list.
C. Deletion of the front node of the linked list.
D. Deletion of the last node of the linked list.

ugcnetcse-aug2016-paper2 data-structures linked-list

Answer key

### 37.16.2 Linked List: UGC NET CSE | December 2009 | Part 2 | Question: 24 top

With regard to linked list, which of the following statement is false ?

(A) An algorithm to search for an element in a singly linked list requires 0(n) operations in the worst case.
(B) An algorithm for deleting the first element in a singly linked list requires 0(n) operations in the worst case.
(C) An algorithm for finding the maximum value in a circular linked list requires 0(n) operations.
(D) An algorithm for deleting the middle node of a circular linked list requires 0(n) operations.

ugcnetcse-dec2009-paper2 data-structures linked-list time-complexity

Answer key

## 37.17 Max Heap (1) top

### 37.17.1 Max Heap: UGC NET CSE | June 2016 | Part 3 | Question: 33 top

Which one of the following array represents a binary max-heap?

A. [26, 13, 17, 14, 11, 9, 15]
B. [26, 15, 14, 17, 11, 9, 13]
C. [26, 15, 17, 14, 11, 9, 13]
D. [26, 15, 13, 14, 11, 9, 17]

ugcnetcse-june2016-paper3 data-structures max-heap

Answer key

## 37.18 Priority (1) top

### 37.18.1 Priority: UGC NET CSE | June 2013 | Part 2 | Question: 30 top

Consider the following statements for priority queue:

S1: It is a data structure in which the intrinsic ordering of the elements does determine the result of its basic operations.

S2: The elements of a priority queue may be complex structures that are ordered on one or several fields

A. Both S1 and S2 are incorrect
B. S1 is correct and S2 is incorrect
C. S1 is incorrect and S2 is correct
D. Both S1 and S2 are correct

data-structures priority ugcnetcse-june2013-paper2

Answer key

## 37.19 Priority Queue (2) top

### 37.19.1 Priority Queue: UGC NET CSE | August 2016 | Part 3 | Question: 34 top

A priority queue is implemented as a max-heap. Initially, it has five elements. The levelorder traversal of the heap is as follows :

20, 18, 15, 13, 12

Two new elements ‘10’ and ‘17’ are inserted in the heap in that order. The level-order traversal of the heap after the insertion of the element is :

A. 20, 18, 17, 15, 13, 12, 10
B. 20, 18, 17, 12, 13, 10, 15
C. 20, 18, 17, 10, 12, 13, 15
D. 20, 18, 17, 13, 12, 10, 15

ugcnetcse-aug2016-paper3 data-structures priority-queue

Answer key

### 37.19.2 Priority Queue: UGC NET CSE | June 2010 | Part 2 | Question: 22 top

What is the most appropriate data structure to implement a priority queue ?

A. Heap
B. Circular array
C. Linked list
D. Binary tree

ugcnetcse-june2010-paper2 data-structures priority-queue

Answer key

## 37.20 Queue (4) top

### 37.20.1 Queue: UGC NET CSE | August 2016 | Part 2 | Question: 24 top

Consider the following statements :

$S_1$ : A queue can be implemented using two stacks.

$S_2$ : A stack can be implemented using two queues.

Which of the following is correct ?

A. $S_1$ is correct and $S_2$ is not correct.
B. $S_1$ is not correct and $S_2$ is correct.
C. Both $S_1$ and $S_2$ are correct.
D. Both $S_1$ and $S_2$ are not correct.

ugcnetcse-aug2016-paper2 data-structures queue stack

Answer key

### 37.20.2 Queue: UGC NET CSE | December 2009 | Part 2 | Question: 23 top

At a hill station, the parking lot is one long drive way snaking up a hill side. Cars drive in and park right behind the car in front of them, one behind another. A car can’t leave until all the cars in front of it have left. Is the parking lot more like

(A) An array

(B) A stack

(C) A queue

(D) A linked list

ugcnetcse-dec2009-paper2 data-structures queue

Answer key

### 37.20.3 Queue: UGC NET CSE | June 2009 | Part 2 | Question: 26 top

Queue is a …… list .

A. $LIFO$
B. $LILO$
C. $FILO$
D. $FIFO$

ugcnetcse-june2009-paper2 data-structures queue

Answer key

### 37.20.4 Queue: UGC NET CSE | September 2013 | Part 2 | Question: 12 top

The efficient data structure to insert/delete a number in a stored set of number is

A. Queue B. Linked list C. Doubly linked list D. Binary tree

ugcnetsep2013ii data-structures queue linked-list

Answer key

## 37.21 Quick Sort (1) top

### 37.21.1 Quick Sort: UGC NET CSE | September 2013 | Part 2 | Question: 10 top

Suppose that the splits at every level of Quicksort are in proportion $1-\beta$ to $\beta$, where $0<\beta\leq 0.5$ is a constant. The number of elements in an array is n. The maximum depth is approximately

A. 0.5 $\beta$ lg n
B. 0.5 (1-$\beta$) lg n
C. -(lg n)/(lg $\beta$)
D. -(lg n)/lg (1-$\beta$)

ugcnetsep2013ii data-structures sorting algorithms quick-sort

Answer key

## 37.22 Radix Sort (2) top

### 37.22.1 Radix Sort: UGC NET CSE | August 2016 | Part 3 | Question: 35 top

If there are $n$ integers to sort, each integer has d digits, and each digit is in the set $\{1,2,\ldots,k\}$, radix sort can sort the numbers in :

A. $O(k(n+d))$
B. $O(d(n+k))$
C. $O((n+k)lgd)$
D. $O((n+d)lgk)$

ugcnetcse-aug2016-paper3 data-structures radix-sort

Answer key

### 37.22.2 Radix Sort: UGC NET CSE | July 2018 | Part 2 | Question: 28 top

The maximum number of comparisons needed to sort 9 items using radix sort is (assume each item is 5 digit octal number):

A. 45 B. 72 C. 360 D. 450

ugcnetcse-july2018-paper2 data-structures radix-sort

Answer key

## 37.23 Recursion (1) top

### 37.23.1 Recursion: UGC NET CSE | January 2017 | Part 3 | Question: 24 top

A recursive function $h$, is defined as follows:

$$\begin{aligned} h(m) &= k, \text{if } m=0 \\ &= 1, \text{if } m=1 \\ &= 2h(m-1)+4h(m-2), \text{if } m\geq 2 \end{aligned}$$

If the value of $h(4)$ is $88$ then the value of $k$ is:

A. $0$ B. $1$ C. $2$ D. $-1$

ugcnetcse-jan2017-paper3 data-structures recursion

Answer key

## 37.24 Relational Algebra (1) top

### 37.24.1 Relational Algebra: UGC NET CSE | October 2020 | Part 2 | Question: 64 top

Match $\text{List I}$ with $\text{List II}$

Let $R_1 = \{(1,1),(2,2),(3,3)\}$ and $R_2 = \{(1,1),(1,2),(1,3),(1,4)\}$

| | List I | | List II |
|---|---|---|---|
| $(A)$ | $R_1 \cup R_2$ | $(I)$ | $\{(1,1),(1,2),(1,3),(1,4),(2,2),(3,3)\}$ |
| $(B)$ | $R_1 - R_2$ | $(II)$ | $\{(1,1)\}$ |
| $(C)$ | $R_1 \cap R_2$ | $(III)$ | $\{(1,2),(1,3),(1,4)\}$ |
| $(D)$ | $R_2 - R_1$ | $(IV)$ | $\{(2,2),(3,3)\}$ |

Choose the correct answer from the options given below:

A. $A-I, B-II, C-IV, D-III$
B. $A-I, B-IV, C-III, D-II$
C. $A-I, B-III, C-II, D-IV$
D. $A-I, B-IV, C-II, D-III$

ugcnetcse-oct2020-paper2 data-structures relational-algebra

Answer key

## 37.25 Spanning Tree (2) top

### 37.25.1 Spanning Tree: UGC NET CSE | August 2016 | Part 3 | Question: 33 top

Consider a weighted complete graph $G$ on the vertex set $\{\nu_1, \nu_2, \ldots . \nu_n\}$ such that the weight of the edge $(\nu_i, \nu_j)$ is $4|i-j|$. The weight of minimum cost spanning tree of $G$ is :

A. $4n^2$
B. $n$
C. $4n-4$
D. $2n-2$

ugcnetcse-aug2016-paper3 data-structures spanning-tree

Answer key

### 37.25.2 Spanning Tree: UGC NET CSE | December 2008 | Part 2 | Question: 3 top

The total number of spanning trees that can be drawn using five labeled vertices is:

1. 125
2. 64
3. 36
4. 16

ugcnetcse-dec2008-paper2 data-structures spanning-tree

Answer key

## 37.26 Stack (12) top

### 37.26.1 Stack: UGC NET CSE | December 2006 | Part 2 | Question: 23 top

What is the time required to insert an element in a stack with linked implementation ?

A. $O(\log_2 n)$
B. $O(n)$
C. $O(n \log_2 n)$
D. $O(1)$

ugcnetcse-dec2006-paper2 stack

Answer key

### 37.26.2 Stack: UGC NET CSE | December 2012 | Part 2 | Question: 40 top

Given an empty stack, after performing push(1), push(2), pop, push(3), push(4), pop, pop, push(5), pop, what is the value of the top of the stack?

A. 4
B. 3
C. 2
D. 1

ugcnetcse-dec2012-paper2 data-structures stack

Answer key

## 37.26.3 Stack: UGC NET CSE | December 2012 | Part 3 | Question: 17 top

Which of the following permutations can be obtained in the output using a stack of size 3 elements assuming that input, sequence is 1, 2, 3, 4, 5?

A. 3, 2, 1, 5, 4
B. 5, 4, 3, 2, 1
C. 3, 4, 5, 2, 1
D. 3, 4, 5, 1, 2

ugcnetcse-dec2012-paper3 data-structures stack

Answer key

## 37.26.4 Stack: UGC NET CSE | December 2014 | Part 2 | Question: 08 top

How many **PUSH** and **POP** operations will be needed to evaluate the following expression by reverse polish notation in a stack machine $(A * B) + (C * D/E)$?

A. $4$ **PUSH** and $3$ **POP** instructions
B. $5$ **PUSH** and $4$ **POP** instructions
C. $6$ **PUSH** and $2$ **POP** instructions
D. $5$ **PUSH** and $3$ **POP** instructions

ugcnetcse-dec2014-paper2 data-structures stack

Answer key

## 37.26.5 Stack: UGC NET CSE | December 2014 | Part 2 | Question: 21 top

Convert the following infix expression into its equivalent post fix expression $(A + B\text{^}D)/(E–F) + G$

A. $ABD\text{^} +EF–/G+$
B. $ABD+\text{^}EF–/G+$
C. $ABD+ \text{^}EF/–G+$
D. $ABD\text{^} +EF/–G+$

ugcnetcse-dec2014-paper2 data-structures stack

Answer key

## 37.26.6 Stack: UGC NET CSE | January 2017 | Part 2 | Question: 22 top

The seven elements $A, B, C, D, E, F$ and $G$ are pushed onto a stack in reverse order, i.e., starting from $G$. The stack is popped five times and each element is inserted into a queue. Two elements are deleted from the queue and pushed back onto the stack. Now, one element is popped from the stack. The popped item is _____.

A. $A$
B. $B$
C. $F$
D. $G$

ugcnetjan2017ii data-structures stack

Answer key

## 37.26.7 Stack: UGC NET CSE | June 2010 | Part 2 | Question: 21 top

If we have six stack operationspushing and popping each of $A, B$ and $C$-such that push $(A)$ must occur before push $(B)$ which must occur before push $(C)$, then $A, C, B$ is a possible order for the pop operations, since this could be our sequence : push $(A)$, pop $(A)$, push $(B)$, push $(C)$, pop $(C)$, pop $(B)$. Which one of the following orders could not be the order the pop operations are run, if we are to satisfy the requirements described above?

A. $ABC$
B. $CBA$
C. $BAC$
D. $CAB$

ugcnetcse-june2010-paper2 data-structures stack

Answer key

## 37.26.8 Stack: UGC NET CSE | June 2012 | Part 3 | Question: 38 top

The following postfix expression is evaluated using a stack. 823^/23*+51*- . The top two elements of the stack after first * is evaluated

A. 6,1
B. 5, 7
C. 3,2
D. 1, 5

ugcnetcse-june2012-paper3 data-structures stack

Answer key

### 37.26.9 Stack: UGC NET CSE | June 2014 | Part 2 | Question: 40 top

What is the maximum number of parenthesis that will appear on the stack at any one time for parenthesis expression given by

$(()\ (())\ (()))$

A. $2$
B. $3$
C. $4$
D. $5$

ugcnetcse-june2014-paper2 data-structures stack

Answer key

### 37.26.10 Stack: UGC NET CSE | June 2014 | Part 3 | Question: 41 top

The reverse polish notation equivalent to the infix expression $((A+B)^*C+D)/(E+F+G)$

A. $AB+C^*D+EF+G+/$
B. $AB+CD^*+EF+G+/$
C. $AB+C^*D+EFG++/$
D. $AB+C^*D+E+FG+/$

ugcnetjune2014iii data-structures stack

Answer key

### 37.26.11 Stack: UGC NET CSE | June 2016 | Part 2 | Question: 22 top

Consider the following operations performed on a stack of size 5:

Push (a); Pop(); Push(b); Push(c); Pop();

Push(d); Pop(); Pop(); Push(e)

Which of the following statements is correct?

A. Underflow occurs
B. Stack operations are performed smoothly
C. Overflow occurs
D. None of the above

ugcnetcse-june2016-paper2 data-structures stack

Answer key

### 37.26.12 Stack: UGC NET CSE | June 2016 | Part 2 | Question: 24 top

Which of the following is not an inherent application of stack?

A. Implementation of recursion
B. Evaluation of a postfix expression
C. Job scheduling
D. Reverse a string

ugcnetcse-june2016-paper2 data-structures stack

Answer key

## 37.27 Tree (10) top

### 37.27.1 Tree: UGC NET CSE | December 2012 | Part 2 | Question: 16 top

In which tree, for every node the height of its left subtree and right subtree differ almost by 1?

A. Binary Search Tree
B. AVL Tree
C. Threaded Binary Tree
D. Complete Binary Tree

ugcnetcse-dec2012-paper2 data-structures tree binary-tree

Answer key

### 37.27.2 Tree: UGC NET CSE | December 2012 | Part 2 | Question: 25 top

Suppose that someone starts with a chain letter. Each person who receives the letter is asked to send it on to $4$ other people. Some people do this, while some do not send any letter. How many people have seen the letter, including the first person, if none receives more than one letter and if the chain letter ends after there have been 100 people who read it but did not send it out? Also find out how many people sent out the letter?

A. $122$ & $22$ B. $111$ & $11$ C. $133$ & $33$ D. $144$ & $44$

ugcnetcse-dec2012-paper2 tree

Answer key

### 37.27.3 Tree: UGC NET CSE | December 2014 | Part 2 | Question: 02 top

A certain tree has two vertices of degree $4$, one vertex of degree $3$ and one vertex of degree $2$. If the other vertices have degree $1$, how many vertices are there in the graph ?

A. $5$ B. $n-3$ C. $20$ D. $11$

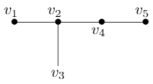
ugcnetcse-dec2014-paper2 data-structures tree

Answer key

### 37.27.4 Tree: UGC NET CSE | December 2015 | Part 2 | Question: 5 top

A tree with n vertices is called graceful, if its vertices can be labelled with integers 1, , ..., n such that the absolute value of the difference of the labels of adjacent vertices are all different. Which of the following trees are graceful?

a.


b. 


c.


A. a and b B. b and c C. a and c D. a, b,and c

ugcnetcse-dec2015-paper2 data-structures tree

Answer key

### 37.27.5 Tree: UGC NET CSE | July 2018 | Part 2 | Question: 29 top

A 5-ary tree in which every internal node has exactly 5 children. The number of left nodes in such a tree with 8 internal nodes will be:

A. 30 B. 33 C. 45 D. 125

ugcnetcse-july2018-paper2 data-structures tree

Answer key

### 37.27.6 Tree: UGC NET CSE | June 2010 | Part 2 | Question: 23 top

In a complete binary tree of n nodes, how far are the two most distant nodes ? Assume each edge in the path counts as !

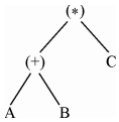
A. About $\log_2 n$
B. About $2\log_2 n$
C. About $n\log_2 n$
D. About $2n$

ugcnetcse-june2010-paper2 data-structures tree

Answer key

### 37.27.7 Tree: UGC NET CSE | June 2010 | Part 2 | Question: 32 top

Which of the following expression is represented by the parse tree ?




A. $(A+B)*C$ B. $A+*BC$ C. $A+B*C$ D. $A*C+B$

ugcnetcse-june2010-paper2 data-structures tree

Answer key

### 37.27.8 Tree: UGC NET CSE | June 2012 | Part 2 | Question: 13 top

Leaves of which of the following trees are at the same level?

A. Binary tree
B. B-tree
C. AVL-tree
D. Expression tree

ugcnetcse-june2012-paper2 programming tree

Answer key

### 37.27.9 Tree: UGC NET CSE | June 2012 | Part 3 | Question: 36 top

Number of binary trees formed with 5 nodes are

A. 32 B. 36 C. 120 D. 42

ugcnetcse-june2012-paper3 data-structures tree

Answer key

### 37.27.10 Tree: UGC NET CSE | June 2016 | Part 2 | Question: 23 top

Suppose you are given a binary tree with n nodes, such that each node has exactly eiter zero or two children. The maximum height of the tree will be

A. $\frac{n}{2} - 1$ B. $\frac{n}{2} + 1$ C. $(n-1)/2$ D. $(n+1)/2$

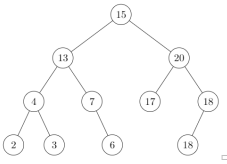
ugcnetcse-june2016-paper2 data-structures tree

Answer key

## 37.28 Tree Traversal (1) top

### 37.28.1 Tree Traversal: UGC NET CSE | December 2015 | Part 2 | Question: 38 top

The inorder traversal of the following tree is




A. $2\ 3\ 4\ 6\ 7\ 13\ 15\ 17\ 18\ 18\ 20$
B. $20\ 18\ 18\ 17\ 15\ 13\ 7\ 6\ 4\ 3\ 2$
C. $15\ 13\ 20\ 4\ 7\ 17\ 18\ 2\ 3\ 6\ 18$
D. $2\ 4\ 3\ 13\ 7\ 6\ 15\ 17\ 20\ 18\ 18$

ugcnetcse-dec2015-paper2 data-structures tree-traversal

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 37.0.1 | Q-Q | 37.0.2 | Q-Q | 37.0.3 | Q-Q | 37.0.4 | Q-Q | 37.0.5 | Q-Q |
| 37.0.6 | Q-Q | 37.0.7 | Q-Q | 37.0.8 | Q-Q | 37.0.9 | Q-Q | 37.0.10 | Q-Q |
| 37.0.11 | Q-Q | 37.0.12 | Q-Q | 37.0.13 | Q-Q | 37.0.14 | Q-Q | 37.1.1 | D |
| 37.2.1 | Q-Q | 37.3.1 | X | 37.4.1 | A | 37.5.1 | Q-Q | 37.5.2 | Q-Q |
| 37.5.3 | D | 37.5.4 | C | 37.5.5 | C | 37.6.1 | Q-Q | 37.6.2 | Q-Q |
| 37.6.3 | B | 37.6.4 | D | 37.6.5 | C | 37.6.6 | C | 37.6.7 | C |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 37.7.1 | C | 37.8.1 | A | 37.9.1 | Q-Q | 37.9.2 | D | 37.9.3 | C |
| 37.9.4 | B | 37.9.5 | C | 37.9.6 | C | 37.9.7 | C | 37.10.1 | Q-Q |
| 37.11.1 | D | 37.12.1 | Q-Q | 37.12.2 | Q-Q | 37.12.3 | Q-Q | 37.12.4 | X |
| 37.12.5 | C | 37.12.6 | Q-Q | 37.12.7 | Q-Q | 37.12.8 | Q-Q | 37.12.9 | C |
| 37.12.10 | A | 37.12.11 | C | 37.13.1 | Q-Q | 37.13.2 | B | 37.13.3 | Q-Q |
| 37.13.4 | D | 37.13.5 | X | 37.13.6 | B | 37.14.1 | B | 37.15.1 | Q-Q |
| 37.16.1 | Q-Q | 37.16.2 | Q-Q | 37.17.1 | C | 37.18.1 | D | 37.19.1 | Q-Q |
| 37.19.2 | Q-Q | 37.20.1 | Q-Q | 37.20.2 | Q-Q | 37.20.3 | Q-Q | 37.20.4 | C |
| 37.21.1 | D | 37.22.1 | Q-Q | 37.22.2 | Q-Q | 37.23.1 | C | 37.24.1 | D |
| 37.25.1 | Q-Q | 37.25.2 | Q-Q | 37.26.1 | Q-Q | 37.26.2 | D | 37.26.3 | A;C |
| 37.26.4 | B | 37.26.5 | A | 37.26.6 | B | 37.26.7 | Q-Q | 37.26.8 | A |
| 37.26.9 | B | 37.26.10 | A | 37.26.11 | B | 37.26.12 | C | 37.27.1 | B |
| 37.27.2 | C | 37.27.3 | D | 37.27.4 | D | 37.27.5 | Q-Q | 37.27.6 | Q-Q |
| 37.27.7 | Q-Q | 37.27.8 | B | 37.27.9 | D | 37.27.10 | C | 37.28.1 | D |

### 38.0.1 UGC NET CSE | December 2012 | Part 3 | Question: 39 top

When a programming language has the capacity to produce new datatype, it is called as,

A. Overloaded Language
B. Extensible Language
C. Encapsulated Language
D. Abstraction Language

programming ugcnetcse-dec2012-paper3

Answer key

### 38.0.2 UGC NET CSE | December 2012 | Part 2 | Question: 15 top

What is the size of the Unicode character in Windows Operating System?

A. 8-Bits
B. 16-Bits
C. 32-Bits
D. 64-Bits

ugcnetcse-dec2012-paper2 non-gate programming

Answer key

### 38.0.3 UGC NET CSE | December 2006 | Part 2 | Question: 15 top

The declaration “unsigned u” indicates :

A. u is an unsigned character
B. u is an unsigned integer
C. u is a character
D. u is a string

ugcnetcse-dec2006-paper2

Answer key

### 38.0.4 UGC NET CSE | December 2004 | Part 2 | Question: 12 top

Consider the following statements,

```
Int i=4, j=3, k=0;
k=++i - --j  +  i++---j  +j++;
```

What will be the values of $i, j$ and $k$ after the statement.

A. $7,2,8$
B. $5,2,10$
C. $6,2,8$
D. $4,2,8$

ugcnetcse-dec2004-paper2

Answer key

### 38.0.5 UGC NET CSE | June 2008 | Part 2 | Question: 13 top

**Consider the following C code:**

**{ int a=5, b=9;**

**float r;**

**r=b/a; }**

**What is the value of r ?**

**(A) 1.8 (B) 1.0**

**(C) 2.0 (D) 0.0**

ugcnetcse-june2008-paper2

Answer key

### 38.0.6 UGC NET CSE | December 2004 | Part 2 | Question: 14 top

A function object :

A. is an instance of a class for which operator ( ) is a member function

B. is an instance of a class for which operator → is a member function
C. is a pointer to any function
D. is a member function of a class

ugcnetcse-dec2004-paper2

Answer key

### 38.0.7 UGC NET 2008 top

Consider the following declaration in C:
char a[];
char *p;
Which of the following statement is not a valid statement?
(A) p=a; (B) p=a+2;
(C) a=p; (D) p=&a[2];

Answer key

### 38.0.8 UGC NET CSE | June 2008 | Part 2 | Question: 14 top

**Function overloading is a concept in which:**

**(A) a function is used to implement lots of tasks at the same time.**

**(B) a function is called too many number of times by another function.**

**(C) a function provides common interface to the user to carry out possibly different functions in each call.**

**(D) a function is computationally too expensive for the system to handle.**

ugcnetcse-june2008-paper2

Answer key

### 38.0.9 UGC NET CSE | December 2015 | Part 2 | Question: 45 top

The ____ transfers the executable image of a C++ program from hard disk to main memory

A. Compiler B. Linker C. Debugger D. Loader

ugcnetcse-dec2015-paper2 programming

Answer key

### 38.0.10 UGC NET CSE | June 2012 | Part 3 | Question: 1 top

Consider the following Pseudo-code segment:
k:=0
for $i_1$:=1 to n
for $i_2$ := 1 to $i_1$
:
:
:
for $i_m$:=1 to $i_{m-1}$
k:=k+1
The value of k after the execution of this code shall be

A. $C(n+m-1,m)$ B. $C(n-m+1,m)$ C. $C(n+m-1,n)$ D. $C(n-m+1,n)$

ugcnetcse-june2012-paper3 programming algorithms

Answer key

## 38.0.11 UGC NET CSE | December 2012 | Part 2 | Question: 41 top

Enumeration is a process of

A. Declaring a set of numbers
B. Sorting a list of strings
C. Assigning a legal values possible for a variable
D. Sequencing a list of operators

ugcnetcse-dec2012-paper2 programming

Answer key

## 38.0.12 UGC NET CSE | December 2007 | Part 2 | Question: 13 top

Which of the following is a valid C code to print character 'A' to 'C' ?

A.
```
x='A' ;
switch(x)
{case 'A'= printf ( "%d\n" , x);
....
case  'C'= printf ( "%d\n" , x);
}
```

B.
```
x='A';
switch(x)
{case  'A' <= x <= 'C'  : printf ( "%d\n" , x);}
```

C.
```
x='A' ;
switch(x)
{
case  'A'  : printf ( "%d\n" , x);
break;
case  'B'  : printf ( "%d\n" , x);
break;
case  'C'  : printf ( "%d\n" , x);
break;
}
```

D.
```
x='A' ;
switch(x)
{
case  'A' =printf ( "%d\n" , x);
case  'B' =printf ( "%d\n" , x);
case  'C' =printf ( "%d\n" , x);
}
```

ugcnetcse-dec2007-paper2

Answer key

## 38.0.13 UGC NET CSE | June 2014 | Part 3 | Question: 10 top

Code blocks allow many algorithms to be implemented with the following parameters :

A. clarity, elegance, performance
B. clarity, elegance, efficiency
C. elegance, performance, execution
D. execution, clarity, performance

ugcnetjune2014iii programming non-gate

Answer key

## 38.0.14 UGC NET CSE | December 2013 | Part 3 | Question: 34 top

_____ comparisons are necessary in the worst case to find both the maximum and minimum of n numbers.

A. 2n – 2
B. n + floor (lg n) – 2
C. floor ($\frac{3n}{2}$) – 2
D. 2 lg n – 2

ugcnetcse-dec2013-paper3 programming

Answer key

## 38.0.15 UGC NET CSE | December 2012 | Part 2 | Question: 39 top

Match the following with respect to $\mathrm{C++}$ data types :

| | | | |
|---|---|---|---|
| a. | User defined type | i. | Qualifier |
| b. | Built in type | ii. | Union |
| c. | Derived Type | iii. | Void |
| d. | Long double | iv. | Pointer |

**Code :**

A. a-ii, b-iii, c-iv, d-i
B. a-iii, b-i, c-iv, d-ii
C. a-iv, b-i, c-ii, d-iii
D. a-iii, b-iv, c-i, d-ii

ugcnetcse-dec2012-paper2 programming

Answer key

## 38.0.16 UGC NET CSE | December 2015 | Part 2 | Question: 17 top

In C++, which system - provided function is called when no handler is provided to deal with an exception?

A. terminate()
B. unexpected()
C. abort()
D. kill()

ugcnetcse-dec2015-paper2 programming

Answer key

## 38.0.17 UGC NET CSE | December 2013 | Part 3 | Question: 16 top

Match the following with respect to the programming language :

| | List – I | | List – II |
|---|---|---|---|
| a. | Structured language | i. | JAVA |
| b. | Non-structured Language | ii. | BASIC |
| c. | Object oriented Programming Language | iii. | PASCAL |
| d. | Interpreted Programming Language | iv. | FORTRAN |

**Codes :**

A. a-iii, b-iv, c-i, d-ii
B. a-iv, b-iii, c-ii, d-i
C. a-ii, b-iv, c-i, d-iii
D. a-ii, b-iii, c-iv, d-i

ugcnetcse-dec2013-paper3 programming

Answer key

## 38.0.18 UGC NET CSE | December 2013 | Part 3 | Question: 15 top

Which of the following correctly describes overloading of functions?

A. Virtual polymorphism
B. Transient polymorphism
C. Ad-hoc polymorphism
D. Pseudo polymorphism

ugcnetcse-dec2013-paper3 programming

Answer key

## 38.0.19 UGC NET CSE | December 2013 | Part 3 | Question: 14 top

Which of the following concepts means adding new concepts to a program as it runs?

A. Data hiding
B. Dynamic loading
C. Dynamic typing
D. Dynamic binding

ugcnetcse-dec2013-paper3 programming

Answer key

## 38.0.20 UGC NET CSE | September 2013 | Part 3 | Question: 66 top

The programming languages C and C++ are not strongly typed languages because

A. Both C and C++ allow functions for which parameters are not type checked
B. Both C and C++ allow functions for which parameters are type checked
C. Both C and C++ allow functions for which parameters are not type checked and also the union types in these

languages are not type checked.

D. Union types in these (C and C++) languages are not type checked

ugcnetcse-sep2013-paper3 programming

Answer key

## 38.0.21 UGC NET CSE | June 2013 | Part 3 | Question: 50 top

What will be the output of the following segment of the program?

```
main()
{
char *s="hello world";
int i=7;
printf("%, *s, i,  s);
}
```

A. syntax error B. hello w C. hello D. o world

ugcnetcse-june2013-paper3

Answer key

## 38.0.22 UGC NET CSE | December 2006 | Part 2 | Question: 13 top

```
int arr[ ]={1, 2, 3, 4}
int count;
incr( ) {return ++count;}
main( )
{
arr[count++]=incr( );
printf("arr[count]=%d\n", arr[count]);
}
```

The value printed by the above program is :

A. $1$ B. $2$ C. $3$ D. $4$

ugcnetcse-dec2006-paper2

## 38.0.23 UGC NET CSE | December 2013 | Part 2 | Question: 20 top

The correct way to round off a floating number x to an integer value is

A. y = (int) (x + 0.5)
B. y = int (x + 0.5)
C. y = (int) x + 0.5
D. y = (int) ((int)x + 0.5)

ugcnetcse-dec2013-paper2

Answer key

## 38.0.24 UGC NET CSE | December 2007 | Part 2 | Question: 11 top

What cannot replace '?' in the following C-code to print all odd numbers less than $100$ ?

```
for (i=1; ? ; i=i+2)
   printf("%d\n", i);
```

1. $i \leq 100$
2. $i \leq 101$
3. $i < 100$
4. $i < 101$

ugcnetcse-dec2007-paper2

Answer key

## 38.0.25 UGC NET CSE | June 2016 | Part 3 | Question: 20 top

Match the following types of variables with the corresponding programming languages :

| | | | |
|---|---|---|---|
| (a) | Static variable | (i) | Local variables in Pascal |
| (b) | Stack dynamic | (ii) | All variables in APL |
| (c) | Explicit heap dynamic | (iii) | Fortran 77 |
| (d) | Implicit heap dynamic | (iv) | All Objects in JAVA |

**Codes :**

A. (a)-(i), (b)-(iii), (c)-(iv), (d)-(ii)
B. (a)-(iv), (b)-(i), (c)-(iii), (d)-(ii)
C. (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)
D. (a)-(ii), (b)-(i), (c)-(iii), (d)-(iv)

ugcnetcse-june2016-paper3 programming

Answer key

## 38.0.26 UGC NET CSE | December 2015 | Part 3 | Question: 9 top

Match the following w.r.t. programming languages :

| | List – I | | List – II |
|---|---|---|---|
| (a) | JAVA | (i) | Dynamically object oriented |
| (b) | Phython | (ii) | Statistically non-object oriented |
| (c) | Prolog | (iii) | Statistically object oriented |
| (d) | ADA | (iv) | Dynamically non-object oriented |

**Codes :**

A. (a)-(iii), (b)-(i), (c)-(ii), (d)-(iv)
B. (a)-(i), (b)-(iii), (c)-(ii), (d)-(iv)
C. (a)-(i), (b)-(iii), (c)-(iv), (d)-(ii)
D. (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)

ugcnetcse-dec2015-paper3 programming non-gate

Answer key

## 38.0.27 UGC NET CSE | June 2009 | Part 2 | Question: 17 top

The friend functions are used in situations where :

A. We want to have access to unrelated classes
B. Dynamic binding is required
C. Exchange of data between classes to take place
D. None of the above

ugcnetcse-june2009-paper2

Answer key

## 38.0.28 UGC NET CSE | December 2009 | Part 2 | Question: 04 top

P : “Program is a step by step execution of the instructions”. Given P, which of the following is true ?

A. Program is a subset of an instruction set.
B. Program is a sequence of a subset of an instruction set.
C. Program is a partially ordered set of an instruction set.
D. All of the above

ugcnetcse-dec2009-paper2 programming

Answer key

## 38.0.29 UGC NET CSE | August 2016 | Part 3 | Question: 19 top

Match the following with reference to Functional programming history :

| | | | |
|---|---|---|---|
| a. | Lambda calculus | i. | Church, 1932 |
| b. | Lambda calculus as programming language | ii. | Wordsworth, 1970 |
| c. | Lazy evaluation | iii. | Haskel, 1990 |
| d. | Type classes | iv. | Mecarthy, 1960 |

**Codes :**

A. a-iv, b-i, c-iii, d-ii
B. a-i, b-iv, c-ii, d-iii
C. a-iii, b-ii, c-iv, d-i
D. a-ii, b-i, c-iv, d-iii

ugcnetcse-aug2016-paper3 programming

Answer key

### 38.0.30 UGC NET CSE | June 2009 | Part 2 | Question: 20 top

There exists a construct which returns a value 'true' if the argument subquery is :

A. empty
B. non-empty
C. in error
D. none of the above

ugcnetcse-june2009-paper2

Answer key

### 38.0.31 UGC NET CSE | June 2016 | Part 2 | Question: 15 top

What is the value returned by the function f given below when n=100?

```
let f(int n)
{ if (n==0) then return n;
else
return n+f(n-2);
}
```

A. 2550
B. 2556
C. 5220
D. 5520

ugcnetcse-june2016-paper2 programming

Answer key

### 38.0.32 UGC NET CSE | June 2016 | Part 3 | Question: 21 top

Which of the following is false regarding the evaluation of computer programming language:

A. Application oriented features
B. Efficiency and reliability
C. Software development
D. Hardware maintenance cost

ugcnetcse-june2016-paper3 programming

Answer key

## 38.1 Abstract Data Type (1) top

### 38.1.1 Abstract Data Type: UGC NET CSE | June 2016 | Part 3 | Question: 19 top

Given the following statements:

a. To implement Abstract Data Type, a programming language require a syntactic unit to encapsulate type definition
b. To implement ADT, a programming language requires some primitive operations that are built in the language processor
c. C++, Ada, Java 5.0, C#2005 provide support for parameterised ADT

Which one of the following options is correct?

A. a, b and c are false
B. a, b are true, c is false
C. a is true, b and c are false
D. a, b and c are true

ugcnetcse-june2016-paper3 programming abstract-data-type

Answer key

## 38.2 Aliasing (1) top

### 38.2.1 Aliasing: UGC NET CSE | August 2016 | Part 3 | Question: 20 top

Aliasing in the context of programming languages refers to :

A. Multiple variables having the same location
B. Multiple variables having the same identifier
C. Multiple variables having the same value
D. Multiple use of same variable

ugcnetcse-aug2016-paper3 programming aliasing

Answer key

## 38.3 Array (3) top

### 38.3.1 Array: UGC NET CSE | June 2013 | Part 3 | Question: 48 top

When an array is passed as a parameter to a function which of the following statements is correct?

A. The function can values in the original array
B. The function cannot values in the original array
C. Results in compilation error
D. Results in run-time error

ugcnetcse-june2013-paper3 programming-in-c array

Answer key

### 38.3.2 Array: UGC NET CSE | Junet 2015 | Part 2 | Question: 11 top

What is the output of the following program: (Assume that the appropriate preprocessor directives are included and there is not syntax error)

```
main( )
  {  char S[]="ABCDEFGH";
     printf("%C", *(&S[3]));
     printf("%s", S+4);
     printf("%u", S);
  /*Base address of S is 1000 */
  }
```

A. ABCDEFGH1000 B. CDEFGH1000 C. DDEFGHH1000 D. DEFGH1000

ugcnetcse-june2015-paper2 programming-in-c array

Answer key

### 38.3.3 Array: UGC NET CSE | October 2020 | Part 2 | Question: 11 top

Suppose you are compiling on a machine with 1-byte chars, 2-byte shorts, 4-byte ints, and 8-byte doubles, and with alignment rules that require the address of every primitive data element to be an integer multiple of the element's size. Suppose further that the compiler is not permitted to reorder fields; padding is used to ensure alignment. How much space will be consumed by the following array?

```
struct {
   short s;
   char c;
   short t;
   char d;
   double r;
   int i;
} A[10]; /*10 element array of structs */
```

A. 150 bytes B. 320 bytes C. 240 bytes D. 200 bytes

ugcnetcse-oct2020-paper2 programming-in-c array

Answer key

## 38.4 Binary Search Tree (1) top

### 38.4.1 Binary Search Tree: UGC NET CSE | December 2014 | Part 3 | Question: 36 top

Suppose that we have numbers between $1$ and $1000$ in a binary search tree and we want to search for the number $365$. Which of the following sequences could not be the sequence of nodes examined ?

A. $4, 254, 403, 400, 332, 346, 399, 365$
B. $926, 222, 913, 246, 900, 260, 364, 365$
C. $927, 204, 913, 242, 914, 247, 365$
D. $4, 401, 389, 221, 268, 384, 383, 280, 365$

ugcnetcse-dec2014-paper3 data-structures binary-search-tree

Answer key

## 38.5 Bitwise Operation (1) top

### 38.5.1 Bitwise Operation: UGC NET CSE | December 2004 | Part 2 | Question: 11 top

Suppose $x$ and $y$ are two Integer Variables having values $0x5AB6$ and $0x61CD$ respectively. The result (in hex) of applying bitwise operator and to $x$ and $y$ will be :

1. $0x5089$
2. $0x4084$
3. $0x78A4$
4. $0x3AD1$

ugcnetcse-dec2004-paper2 programming-in-c bitwise-operation

Answer key

## 38.6 Data Types (2) top

### 38.6.1 Data Types: UGC NET CSE | December 2005 | Part 2 | Question: 11 top

What is the output of the following $C$-program

```
main()
{
   printf("%d %d %d",size of (3.14f), size of (3.14), size of (3.141));
}
```

A. 4 4 4 B. 4 8 10 C. 8 4 8 D. 8 8 8

ugcnetcse-dec2005-paper2 programming-in-c data-types

Answer key

### 38.6.2 Data Types: UGC NET CSE | June 2010 | Part 2 | Question: 15 top

The data type created by the data abstraction process is called

A. Class
B. Structure
C. Abstract data type
D. User defined data type

ugcnetcse-june2010-paper2 programming data-types

Answer key

## 38.7 Dynamic Memory Allocation (1) top

### 38.7.1 Dynamic Memory Allocation: UGC NET CSE | June 2012 | Part 3 | Question: 24 top

The _____ memory allocation function modifies the previous allocated space.

A. calloc() B. free() C. malloc() D. realloc()

ugcnetcse-june2012-paper3 programming-in-c dynamic-memory-allocation

Answer key

## 38.8 Evaluation Postfix (1) top

### 38.8.1 Evaluation Postfix: UGC NET CSE | December 2013 | Part 2 | Question: 21 top

What is the value of the postfix expression a b c d + - * (where a=8, b=4, c=2 and d=5)

A. $-\frac{3}{8}$ B. $-\frac{8}{3}$ C. 24 D. -24

ugcnetcse-dec2013-paper2 evaluation-postfix

Answer key

## 38.9 Exception Handling (1) top

### 38.9.1 Exception Handling: UGC NET CSE | December 2012 | Part 2 | Question: 29 top

Which of the following are two special functions that are meant for handling exception, that occur during exception handling itself?

A. Void terminate () and void unexpected()
B. Non void terminate () and void unexpected()
C. Void terminate () and non void unexpected()
D. Non void terminate () and non void unexpected()

ugcnetcse-dec2012-paper2 programming exception-handling

Answer key

## 38.10 Expression Evaluation (1) top

### 38.10.1 Expression Evaluation: UGC NET CSE | December 2004 | Part 2 | Question: 13 top

What is the value of the arithmetic expression (Written in C)

$2 * 3/4 - 3/4 * 2$

A. $0$ B. $1$ C. $1.5$ D. None of these

ugcnetcse-dec2004-paper2 programming-in-c expression-evaluation operator-precedence

Answer key

## 38.11 File Handling (1) top

### 38.11.1 File Handling: UGC NET CSE | December 2012 | Part 2 | Question: 42 top

Which of the following mode declaration used in C++ to open a file for input?

A. ios : : app B. in : : ios C. ios : : file D. ios : : in

ugcnetcse-dec2012-paper2 programming file-handling

Answer key

## 38.12 Graph Coloring (1) top

### 38.12.1 Graph Coloring: UGC NET CSE | June 2012 | Part 3 | Question: 31 top

The upper bound of computing time of m colouring decision problem is

A. $O(nm)$ B. $O(n^m)$ C. $O(nm^n)$ D. $O(n^m m^n)$

ugcnetcse-june2012-paper3 graph-theory graph-coloring

Answer key

## 38.13 Io Statement (1) top

### 38.13.1 Io Statement: UGC NET CSE | December 2008 | Part 2 | Question: 26 top

The output of the program code

```
main()
{
int x=0;
while (x<=10)
for(;;)
if(++x%10==0)
break;
printf("x=%d",x);
}
```

is :

A. x=1
B. compilation error
C. x=20
D. none of the above

ugcnetcse-dec2008-paper2 programming-in-c io-statement

Answer key

## 38.14 Java (4) top

### 38.14.1 Java: UGC NET CSE | December 2012 | Part 2 | Question: 21 top

Which API is used to draw a circle?

A. Circle () B. Ellipse () C. Round Rect () D. Pie ()

ugcnetcse-dec2012-paper2 programming java bad-question

Answer key

### 38.14.2 Java: UGC NET CSE | July 2018 | Part 2 | Question: 7 top

Which of the following statements is/are true?

P: C programming language has a weak type system with static types.

Q: Java programming language has a string type system with static types

**Code:**

A. P only B. Q only C. Both P and Q D. Neither P nor Q

ugcnetcse-july2018-paper2 programming-in-c java

Answer key

### 38.14.3 Java: UGC NET CSE | June 2012 | Part 3 | Question: 26 top

The mechanism that binds code and data together and keeps them secure form outside world is known as

A. Abstraction B. Inheritance C. Encapsulation D. Polymorphism

ugcnetcse-june2012-paper3 programming programming-in-c java object-oriented-programming

Answer key

### 38.14.4 Java: UGC NET CSE | June 2012 | Part 3 | Question: 55 top

Match the following with respect to java.util.∗ class methods :

| | | | |
|---|---|---|---|
| (a) | Bit Set | (i) | Time zone getTimezone() |
| (b) | Calender | (ii) | int hashcode() |
| (c) | Time zone | (iii) | int nextInt() |
| (d) | Random | (iv) | Void setID(String tzName) |

A. (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)
B. (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)
C. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)
D. (a)-(ii), (b)-(i), (c)-(iii), (d)-(iv)

ugcnetcse-june2012-paper3 programming object-oriented-programming java

Answer key

## 38.15 Linked List (1) top

### 38.15.1 Linked List: UGC NET CSE | December 2013 | Part 2 | Question: 22 top

If the queue is implemented with a linked list, keeping track of a front pointer, which of these pointers will change during an insertion into an non-empty queue?

A. Neither of the pointer change
B. Only front pointer changes
C. Only rear pointer changes
D. Both of the pointer changes

ugcnetcse-dec2013-paper2 data-structures linked-list

Answer key

## 38.16 Loop (1) top

### 38.16.1 Loop: UGC NET CSE | December 2010 | Part 2 | Question: 14 top

Which one of the following sentences is true ?

A. The body of a while loop is executed at least once.
B. The body of a do … while loop is executed at least once.
C. The body of a do … while loop is executed zero or more times.
D. A for loop can never be used in place of a while loop.

ugcnetcse-dec2010-paper2 programming loop

Answer key

## 38.17 Object Oriented Programming (3) top

### 38.17.1 Object Oriented Programming: UGC NET CSE | December 2009 | Part 2 | Question: 14 top

Encapsulation is

(A) Dynamic binding

(B) A mechanism to associate the code and data.

(C) Data abstraction

(D) Creating new class

ugcnetcse-dec2009-paper2 programming object-oriented-programming

Answer key

### 38.17.2 Object Oriented Programming: UGC NET CSE | December 2009 | Part 2 | Question: 14 top

A _____ is a special method used to initialize the instance variable of a class.

(A) Member function

(B) Destructor

(C) Constructor

(D) Structure

ugcnetcse-dec2009-paper2 programming object-oriented-programming

Answer key

### 38.17.3 Object Oriented Programming: UGC NET CSE | December 2009 | Part 2 | Question: 15 top

Which of the statements are true ?
I. Function overloading is done at compile time.
II. Protected members are accessible to the member of derived class.
III. A derived class inherits constructors and destructors.
IV. A friend function can be called like a normal function.
V. Nested class is a derived class.

(A) I, II, III

(B) II, III, V

(C) III, IV, V

(D) I, II, IV

ugcnetcse-dec2009-paper2 object-oriented-programming

Answer key

## 38.18 Operator Precedence (1) top

### 38.18.1 Operator Precedence: UGC NET CSE | June 2010 | Part 2 | Question: 33 top

Consider the following left associative operators in decreasing order of precedence :

- subtraction (highest precedence)

* multiplication

$ exponentiation (lowest precedence)

What is the result of the following expression ?

3 – 2 * 4 $ | * 2** 3

A. $-61$ B. $64$ C. $512$ D. $4096$

ugcnetcse-june2010-paper2 programming operator-precedence

## 38.19 Pointers (2) top

### 38.19.1 Pointers: UGC NET CSE | December 2014 | Part 2 | Question: 12 top

What does the following expression means ?

char $*(*(*a[N])())()$;

A. A pointer to a function returning array of n pointers to function returning character pointers.
B. A function return array of N pointers to functions returning pointers to characters
C. An array of n pointers to function returning pointers to characters
D. An array of n pointers to function returning pointers to functions returning pointers to characters.

ugcnetcse-dec2014-paper2 programming-in-c pointers

Answer key

### 38.19.2 Pointers: UGC NET CSE | June 2010 | Part 2 | Question: 12 top

What will be the output of the following c-code?

```
void main ()
{
  char *p= "ayqm";
  char c;
  c=++*p;
  printf ("%c" , c);
}
```

A. $a$ B. $c$ C. $b$ D. $q$

ugcnetcse-june2010-paper2 programming-in-c pointers

Answer key

## 38.20 Programming In C (15) top

### 38.20.1 Programming In C: Modified UGC NET 2012 Memory allocation scheme top

Which among the following is (are) able to modify previously allocated space

I. calloc() II. free() III. realloc()

A. Both II and III

B. I , II and III

C. III only

D. II only

programming-in-c

Answer key

### 38.20.2 Programming In C: UGC NET CSE | December 2013 | Part 2 | Question: 16 top

What does the following declaration mean?

```
int (*ptr) [10];
```

A. ptr is an array of pointers of 10 integers
B. ptr is a pointer to an array of 10 integers
C. ptr is an array of 10 integers
D. none of the above

ugcnetcse-dec2013-paper2 programming-in-c

Answer key

### 38.20.3 Programming In C: UGC NET CSE | December 2013 | Part 2 | Question: 17 top

Which of the following has compilation error in C?

A. int n=32 ;
B. char ch=65 ;
C. float f=(float) 3.2 ;
D. none of the above

ugcnetcse-dec2013-paper2 programming-in-c

Answer key

### 38.20.4 Programming In C: UGC NET CSE | December 2014 | Part 2 | Question: 11 top

What will be the output of the following $'C'$ code ?

```
main ()
{   int x = 128;
    printf ("\n%d", 1+x++);
}
```

A. $128$ B. $129$ C. $130$ D. $131$

ugcnetcse-dec2014-paper2 programming-in-c

Answer key

### 38.20.5 Programming In C: UGC NET CSE | June 2012 | Part 2 | Question: 38 top

printf(“%c”, 100);

A. prints 100
B. prints ASCII equivalent of 100
C. prints garbage
D. None of the above

non-gate programming-in-c ugcnetcse-june2012-paper2

Answer key

## 38.20.6 Programming In C: UGC NET CSE | June 2013 | Part 3 | Question: 52 top

Match the following :

| | | | |
|---|---|---|---|
| a. | calloc() | i. | Frees previously allocated space |
| b. | free() | ii. | Modifies previously allocated space |
| c. | malloc() | iii. | Allocates space for array |
| d. | realloc() | iv. | Allocates requested size of space |

**Codes :**

A. a-iii, b-i, c-iv, d-ii
B. a-iii, b-ii, c-i, d-iv
C. a-iii, b-iv, c-i, d-ii
D. a-iv, b-ii, c-iii, d-i

ugcnetcse-june2013-paper3 programming-in-c

Answer key

## 38.20.7 Programming In C: UGC NET CSE | June 2014 | Part 2 | Question: 42 top

When we pass an array as an argument to a function, what actually gets passed ?

A. Address of the array
B. Values of the elements of the array
C. Base address of the array
D. Number of elements of the array

ugcnetcse-june2014-paper2 programming programming-in-c

Answer key

## 38.20.8 Programming In C: UGC NET CSE | June 2014 | Part 2 | Question: 43 top

While (87) printf("computer"); The above $C$ statement will

A. print "computer" $87$ times
B. print "computer" $0$ times
C. print "computer" $1$ times
D. print "computer" infinite times

ugcnetcse-june2014-paper2 programming-in-c

Answer key

## 38.20.9 Programming In C: UGC NET CSE | June 2014 | Part 3 | Question: 11 top

Match the following with respect to the jump statements :

| | List – I | | List – II |
|---|---|---|---|
| a. | return | i. | The conditional test and increment portions |
| b. | goto | ii. | A value associated with it |
| c. | break | iii. | Requires a label for operation |
| d. | continue | iv. | An exit from only the innermost loop |

**Codes :**

A. a-ii, b-iii, c-iv, d-i
B. a-iii, b-iv, c-i, d-ii
C. a-iv, b-iii, c-ii, d-i
D. a-iv, b-iii, c-i, d-ii

ugcnetjune2014iii programming programming-in-c

Answer key

## 38.20.10 Programming In C: UGC NET CSE | June 2016 | Part 2 | Question: 11 top

Given i=0, j=1, k=-1, x=0.5, y=0.0, what is the output of the following expression in C language?

x*y<i+j ||k

A. -1
B. 0
C. 1
D. 2

ugcnetcse-june2016-paper2 programming-in-c

Answer key

## 38.20.11 Programming In C: UGC NET CSE | June 2016 | Part 2 | Question: 12 top

The following statement in C : int (*f())[ ]; declares

A. a function returning a pointer to an array of integers
B. a function returning an array of pointers to integers
C. array of functions returning pointers to integers
D. an illegal statement

ugcnetcse-june2016-paper2 programming-in-c

Answer key

## 38.20.12 Programming In C: UGC NET CSE | June 2019 | Part 2 | Question: 22 top

Consider the following C-code fragment running on a $32$-bit $X86$ machine:

```
typedef struct {
union {
    unsigned char a;
    unsigned short b;
     } U;
unsigned char c;
}S;

S   B[10];
S*p=&B[4];
S*q=&B[5];
p → U.b=0x1234;
/* structure S takes 32-bits */
```

If M is the value of $q-p$ and $N$ is the value of $((\text{int})\&(p \to c))-((\text{int})p)$, then $(M,N)$ is

A. $(1,1)$ B. $(3,2)$ C. $(1,2)$ D. $(4,4)$

ugcnetcse-june2019-paper2 programming-in-c

Answer key

## 38.20.13 Programming In C: UGC NET CSE | Junet 2015 | Part 2 | Question: 13 top

Given that $x=7.5, j=-1.0, n=1.0, m=2.0$ the value of $--x+j==x>n>=m$ is:

A. $0$ B. $1$ C. $2$ D. $3$

ugcnetcse-june2015-paper2 programming-in-c

Answer key

## 38.20.14 Programming In C: UGC NET CSE | September 2013 | Part 2 | Question: 35 top

Assume that $x$ and $y$ are non-zero positive integers. What does the following program segment perform?

```
while (x!=0)
{
if(x>y)
x=x-y;
else y=y-x;
printf("%d", x)
}
```

A. Computes LCM of two numbers
B. Computes GCD of two numbers
C. Divides large number with small number
D. Subtracts smaller number from larger number

ugcnetsep2013ii programming-in-c

Answer key

## 38.20.15 Programming In C: UGC NET CSE | September 2013 | Part 3 | Question: 54 top

A program contains the following declarations and initial assignments.

int i=8, j=5;

double x =0.005, y=-0.1;

char c='c', d='d';

Determine the value of the following expressions which involve the use of library functions:

abs(1-2*j); log(exp(x)); toupper(d)

A. 2; 0.005; D B. 1; 0.005; D C. 2; 0.005; E D. 1; 0.005; e

ugcnetcse-sep2013-paper3 programming-in-c

Answer key

## 38.21 Pseudocode (1) top

### 38.21.1 Pseudocode: UGC NET CSE | June 2019 | Part 2 | Question: 21 top

Consider the following pseudo-code fragment in which an invariant for the loop is "$m^*x^k = p^n$ and $k \geq 0$" (here, $p$ and $n$ are integer variable that have been initialized):

/* Pre-conditions : $p \geq 1 \wedge n \geq 0$ */

/* Assume that overflow never occurs */

int $x = p$; int $k = n$; int $m = 1$;

while $(k <> 0)$ {

if (k is odd) then $m = m^*x$;

$x = x^*x$;

$k = \lfloor k/2 \rfloor$; /* floor$(k/2)$ */

}

Which of the following must be true ar the end of the while loop?

A. $x = p^n$ B. $m = p^n$ C. $p = x^n$ D. $p = m^n$

ugcnetcse-june2019-paper2 pseudocode

Answer key

## 38.22 Row Major Address Calculation (1) top

### 38.22.1 Row Major Address Calculation: UGC NET CSE | December 2014 | Part 2 | Question: 24 top

Consider an array $A[20, 10]$, assume $4$ words per memory cell and the base address of array $A$ is $100$. What is the address of $A[11, 5]$ ? Assume row major storage.

A. $560$ B. $565$ C. $570$ D. $575$

ugcnetcse-dec2014-paper2 array row-major-address-calculation

Answer key

## 38.23 Storage Classes In C (2) top

### 38.23.1 Storage Classes In C: UGC NET CSE | June 2009 | Part 2 | Question: 16 top

Which of the following does not represent a valid storage class in 'c'?

A. automatic
B. static
C. union
D. extern

ugcnetcse-june2009-paper2 programming-in-c storage-classes-in-c

Answer key

### 38.23.2 Storage Classes In C: UGC NET CSE | June 2014 | Part 2 | Question: 41 top

Match the following :

| | List – I | | List – II |
|---|---|---|---|
| a. | Automatic Storage Class | i. | Scope of the variable is global |
| b. | Register Storage Class | ii. | Value of the variable persists between different function calls |
| c. | Static Storage Class | iii. | Value stored in memory and local to the block in which the variable is defined |
| d. | External Storage class | iv. | value stored in CPU registers |

**Codes :**

A. a-iii; b-iv; c-i; d-ii
B. a-iii; b-iv; c-ii; d-i
C. a-iv; b-iii; c-ii; d-ii
D. a-iv; b-iii; ci; d-ii

ugcnetcse-june2014-paper2 programming-in-c storage-classes-in-c

Answer key

## 38.24 Tree Traversal (1) top

### 38.24.1 Tree Traversal: UGC NET CSE | Junet 2015 | Part 2 | Question: 23 top

Level order Traversal of a rooted Tree can be done by starting from root and performing:

A. Breadth First Search
B. Depth First Search
C. Root Search
D. Deep Search

ugcnetcse-june2015-paper2 data-structures tree-traversal

Answer key

## 38.25 Undefined Behaviour (1) top

### 38.25.1 Undefined Behaviour: UGC NET CSE | June 2009 | Part 2 | Question: 15 top

What is the value of '$b$' after the execution of the following code statements :

$C = 10;$

$B = ++c+++c;$

A. $20$
B. $22$
C. $23$
D. None

ugcnetcse-june2009-paper2 programming-in-c undefined-behaviour bad-question

Answer key

## 38.26 Union (1) top

### 38.26.1 Union: UGC NET CSE | July 2018 | Part 2 | Question: 4 top

What is the output of the following 'C' program? (Assuming little – endian representation of multi-byte data in which Least Significant Byte (LSB) is stored at the lowest memory address.)

```
#include<stdio.h>
#include<stdlib.h>
/* Assume short int occupies two bytes of storage */
int main ()
{
   union saving
   {
      short int one;
      char two[2];
   };
   union saving m;
```

```
    m.two [0] =5;
    m.two [1] =2;
    printf("%d, %d, %d\n", m.two[0], m.two[1], m.one);
}/* end of main */
```

A. 5, 2, 1282 B. 5, 2, 52 C. 5, 2, 25 D. 5, 2, 517

ugcnetcse-july2018-paper2 programming-in-c union

Answer key

## 38.27 Variable Scope (4) top

### 38.27.1 Variable Scope: UGC NET CSE | December 2008 | Part 2 | Question: 25 top

Which one of the following describes correctly a static variable?

A. It cannot be initialized
B. It is initialized once at the commencement of execution and cannot be changed at run time
C. It retains its value during the life of the program
D. None of the above

ugcnetcse-dec2008-paper2 programming-in-c variable-scope

Answer key

### 38.27.2 Variable Scope: UGC NET CSE | June 2005 | Part 2 | Question: 11 top

After $3$ calls of the $c$ function bug ( ) below, the values of $i$ and $j$ will be :

```
int j = 1;
bug ()
{
  static int i = 0; int j = 0;
  i++; j++;
  return (i);
}
```

A. $i=0, j=0$ B. $i=3, j=3$ C. $i=3, j=0$ D. $i=3, j=1$

ugcnetcse-june2005-paper2 programming-in-c variable-scope

Answer key

### 38.27.3 Variable Scope: UGC NET CSE | June 2005 | Part 2 | Question: 12 top

Find the output of the following "$C$" code :

```
Main()
{ int x=20, y=35;
    x=y++ + x++;
    y=++y + ++x;
  printf ("%d, %d\n", x, y);
}
```

A. $55, 93$ B. $53, 97$ C. $56, 95$ D. $57, 94$

ugcnetcse-june2005-paper2 programming-in-c variable-scope

Answer key

### 38.27.4 Variable Scope: UGC NET CSE | June 2005 | Part 2 | Question: 15 top

```
Main()
{ char *str="abcde";
printf("%c",*str);
printf("%c",*str++);
printf("%c",*(str++));
printf("%s",str);
}
```

The output of the above '$C'$ code will be :

A. $\mathrm{a\ a\ c\ b\ c\ d\ e}$
B. $\mathrm{a\ a\ c\ c\ c\ d\ e}$
C. $\mathrm{a\ a\ b\ c\ d\ e}$
D. None of these

ugcnetcse-june2005-paper2 programming-in-c variable-scope

Answer key

## Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 38.0.1 | B | 38.0.2 | B | 38.0.3 | Q-Q | 38.0.4 | Q-Q | 38.0.5 | Q-Q |
| 38.0.6 | A | 38.0.7 | Q-Q | 38.0.8 | Q-Q | 38.0.9 | D | 38.0.10 | A |
| 38.0.11 | C | 38.0.12 | Q-Q | 38.0.13 | B | 38.0.14 | C | 38.0.15 | A |
| 38.0.16 | A | 38.0.17 | A | 38.0.18 | C | 38.0.19 | B | 38.0.20 | C |
| 38.0.21 | X | 38.0.22 | Q-Q | 38.0.23 | A | 38.0.24 | Q-Q | 38.0.25 | C |
| 38.0.26 | B | 38.0.27 | C | 38.0.28 | Q-Q | 38.0.29 | Q-Q | 38.0.30 | Q-Q |
| 38.0.31 | A | 38.0.32 | D | 38.1.1 | D | 38.2.1 | Q-Q | 38.3.1 | A |
| 38.3.2 | D | 38.3.3 | C | 38.4.1 | C | 38.5.1 | B | 38.6.1 | Q-Q |
| 38.6.2 | Q-Q | 38.7.1 | D | 38.8.1 | D | 38.9.1 | A | 38.10.1 | Q-Q |
| 38.11.1 | D | 38.12.1 | C | 38.13.1 | Q-Q | 38.14.1 | B | 38.14.2 | Q-Q |
| 38.14.3 | C | 38.14.4 | A | 38.15.1 | C | 38.16.1 | Q-Q | 38.17.1 | Q-Q |
| 38.17.2 | Q-Q | 38.17.3 | Q-Q | 38.18.1 | Q-Q | 38.19.1 | X | 38.19.2 | Q-Q |
| 38.20.1 | Q-Q | 38.20.2 | B | 38.20.3 | D | 38.20.4 | B | 38.20.5 | B |
| 38.20.6 | A | 38.20.7 | C | 38.20.8 | D | 38.20.9 | A | 38.20.10 | C |
| 38.20.11 | A | 38.20.12 | C | 38.20.13 | A | 38.20.14 | B | 38.20.15 | A |
| 38.21.1 | B | 38.22.1 | A | 38.23.1 | Q-Q | 38.23.2 | B | 38.24.1 | A |
| 38.25.1 | Q-Q | 38.26.1 | Q-Q | 38.27.1 | Q-Q | 38.27.2 | Q-Q | 38.27.3 | Q-Q |
| 38.27.4 | Q-Q | | | | | | | | |

### 39.0.1 UGC NET CSE | December 2012 | Part 3 | Question: 50 top

Which of the following definitions generates the same Language as $L$, where $L = \{WW^R \mid W \in \{a,b\}^* \}$?

A. $S \rightarrow asb \mid bsa \mid \in$
B. $S \rightarrow asa \mid bsb \mid \in$
C. $S \rightarrow asa \mid bsa \mid asa \mid bsb \mid \in$
D. $S \rightarrow asa \mid bsa \mid asa \mid bsb \mid$

ugcnetcse-dec2012-paper3 theory-of-computation

Answer key

### 39.0.2 UGC NET CSE | June 2012 | Part 3 | Question: 25, UGCNET-Dec2013-III: 42 top

Which is not the correct statement(s)?

I. Every context sensitive language is recursive
II. There is a recursive language that is not context sensitive

A. I is true II is false
B. I is true and II is true
C. I is false II is false
D. I is false and II is true

ugcnetcse-june2012-paper3 ugcnetcse-dec2013-paper3 theory-of-computation

Answer key

### 39.0.3 UGC NET CSE | December 2013 | Part 3 | Question: 41 top

The Greibach normal form grammar for the language $L = \{a^n b^{n+1} \mid n \geq 0\}$ is

A. $S \rightarrow aSB, B \rightarrow bB \mid \lambda$
B. $S \rightarrow aSB, B \rightarrow bB \mid b$
C. $S \rightarrow aSB \mid b, B \rightarrow b$
D. $S \rightarrow aSb \mid b$

ugcnetcse-dec2013-paper3 theory-of-computation

Answer key

### 39.0.4 UGC NET CSE | December 2015 | Part 3 | Question: 23 top

Match the following :

| | **List – I** | | **List – II** |
|---|---|---|---|
| (a) | $\{a^n b^n \mid n > 0\}$ is a deterministic context free language | (i) | but not recursive language |
| (b) | The complement of $\{a^n b^n a^n \mid n > 0\}$ is a context free language | (ii) | but not context free language |
| (c) | $\{a^n b^n a^n\}$ is a context sensitive language | (iii) | but cannot be accepted by a deterministic pushdown automaton |
| (d) | L is a recursive language | (iv) | but not regular |

**Codes :**

A. (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)
B. (a)-(i), (b)-(ii), (c)-(iv), (d)-(iii)
C. (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)
D. (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)

ugcnetcse-dec2015-paper3 theory-of-computation

Answer key

### 39.0.5 UGC NET CSE | December 2015 | Part 2 | Question: 15 top

In general, in a recursive and non-recursive implementation of a problem (program):

A. Both time and space complexities are better in recursive than in non-recursive program
B. Both time and space complexities are better in non-recursive than in recursive program
C. Time complexity is better in recursive version but space complexity is better in non-recursive version of a program
D. Space complexity is better in recursive version but time complexity is better in non-recursive version of a program

ugcnetcse-dec2015-paper2 theory-of-computation

Answer key

### 39.0.6 UGC NET CSE | December 2004 | Part 2 | Question: 3 top

The context-free languages are closed for :

i. Intersection
ii. Union
iii. Complementation
iv. Kleene Star

A. (i) and (iv) B. (i) and (iii) C. (ii) and (iv) D. (ii) and (iii)

ugcnetcse-dec2004-paper2

Answer key

### 39.0.7 UGC NET CSE | December 2006 | Part 2 | Question: 1 top

Which of the regular expressions corresponds to this grammar ?

$S \rightarrow AB/AS, A \rightarrow a/aA, B \rightarrow b$

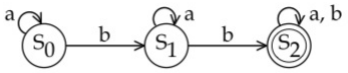
A. $aa^*b^+$ B. $aa^*b$ C. $(ab)^*$ D. $a(ab)^*$

ugcnetcse-dec2006-paper2

Answer key

### 39.0.8 UGC NET CSE | December 2007 | Part 2 | Question: 5 top

Consider a Moore machine $M$ whose digraph is :




Then $L(M)$, the language accepted by the machine M, is the set of all strings having :

A. two or more b's
B. three or more b's
C. two or more a's
D. three or more a's

ugcnetcse-dec2007-paper2

Answer key

### 39.0.9 UGC NET CSE | June 2013 | Part 3 | Question: 36 top

The grammar with production rules $S \rightarrow aSb \mid SS \mid \lambda$ generates language $L$ given by:

A. $L = \{w \in \{a,b\}* \mid n_a(w) = n_b(w) \text{ and } n_a(v) \geq n_b(v) \text{ where v is any prefix of w}\}$
B. $L = \{w \in \{a,b\}* \mid n_a(w) = n_b(w) \text{ and } n_a(v) \leq n_b(v) \text{ where v is any prefix of w}\}$
C. $L = \{w \in \{a,b\}* \mid n_a(w) \neq n_b(w) \text{ and } n_a(v) \geq n_b(v) \text{ where v is any prefix of w}\}$
D. $L = \{w \in \{a,b\}* \mid n_a(w) \neq n_b(w) \text{ and } n_a(v) \leq n_b(v) \text{ where v is any prefix of w}\}$

ugcnetcse-june2013-paper3 theory-of-computation

Answer key

## 39.0.10 UGC NET CSE | December 2012 | Part 3 | Question: 57 top

Given the following statements:

I. Recursive enumerable sets are closed under complementation.
II. Recursive sets are closed under complementation.

Which is/are the correct statement?

A. only I
B. only II
C. both I and II
D. neither I nor II

theory-of-computation ugcnetcse-dec2012-paper3

Answer key

## 39.0.11 UGC NET CSE | Junet 2015 | Part 3 | Question: 63 top

Given the following grammars:

$$\begin{aligned} G_1 \quad & S \rightarrow AB \mid aaB \\ & A \rightarrow aA \mid \epsilon \\ & B \rightarrow bB \mid \epsilon \\ G_2: \quad & S \rightarrow A \mid B \\ & A \rightarrow aAb \mid ab \\ & B \rightarrow abB \mid \epsilon \end{aligned}$$

Which of the following is correct?

A. $G_1$ is ambiguous and $G_2$ is unambiguous grammars
B. $G_1$ is unambiguous and $G_2$ is ambiguous grammars
C. both $G_1$ and $G_2$ are ambiguous grammars
D. both $G_1$ and $G_2$ are unambiguous grammars

ugcnetcse-june2015-paper3 theory-of-computation compiler-design

Answer key

## 39.0.12 UGC NET CSE | December 2018 | Part 2 | Question: 35 top

Consider the following languages:

$$L_1 = \{a^{n+m} b^n a^m \mid n, m \geq 0\}$$
$$L_2 = \{a^{n+m} b^{n+m} a^{n+m} \mid n, m \geq 0\}$$

Which of the following is correct ?

$Code:$

A. Only $L_1$ is context free language
B. Only $L_2$ is context free language
C. Both $L_1$ and $L_2$ are context free languages
D. Both $L_1$ and $L_2$ are not context free languages

ugcnetcse-dec2018-paper2 theory-of-computation

Answer key

## 39.0.13 UGC NET CSE | December 2018 | Part 2 | Question: 34 top

Consider the following two languages :

$$L_1 = \{x \mid \text{ for some y with } \mid y \mid = 2^{|x|}, xy \in \text{ L and L is regular language}\}$$
$$L_2 = \{x \mid \text{ for some y such that } \mid x \mid = \mid y \mid, xy \in \text{ L and L is regular language}\}$$

Which one of the following is correct ?

A. Only $L_1$ is regular language
B. Only $L_2$ is regular language
C. Both $L_1$ and $L_2$ are regular languages
D. Both $L_1$ and $L_2$ are not regular languages

ugcnetcse-dec2018-paper2 theory-of-computation

Answer key

## 39.0.14 UGC NET CSE | September 2013 | Part 2 | Question: 18 top

The number of 8-bit strings beginning with either 111 or 101 is

A. 64 B. 128 C. 265 D. None of the above

theory-of-computation ugcnetsep2013ii

Answer key

## 39.0.15 UGC NET CSE | December 2012 | Part 3 | Question: 45 top

Which of the following regular expression identifies are true?

A. (r+s)*=r*s* B. (r+s)*=r*+s* C. (r+s)*=(r*s*)* D. r*s*=r*+s*

theory-of-computation ugcnetcse-dec2012-paper3

Answer key

## 39.0.16 UGC NET CSE | December 2012 | Part 2 | Question: 7 top

The 'C' language is

A. Context free language
B. Context sensitive language
C. Regular language
D. None of the above

ugcnetcse-dec2012-paper2 theory-of-computation

Answer key

## 39.0.17 UGC NET CSE | December 2015 | Part 3 | Question: 27 top

There are exactly ____ different finite automata with three states $x$, $y$ and $z$ over the alphabet $\{a, b\}$ where $x$ is always the start state

A. $64$ B. $256$ C. $1024$ D. $5832$

ugcnetcse-dec2015-paper3 theory-of-computation

Answer key

## 39.0.18 UGC NET CSE | June 2012 | Part 3 | Question: 52 top

Match the following :

| | | | |
|---|---|---|---|
| (i) | Regular grammer | (a) | Pushdown automaton |
| (ii) | Context free grammer | (b) | Linear bounded automaton |
| (iii) | Unrestricted grammer | (c) | Deterministic finite automaton |
| (iv) | Context sensitive grammer | (d) | Turing machine |

A. (i)-(c), (ii)-(a), (iii)-(b), (iv)-(d)
B. (i)-(c), (ii)-(a), (iii)-(b), (iv)-(d)
C. (i)-(c), (ii)-(b), (iii)-(a), (iv)-(d)
D. (i)-(c), (ii)-(b), (iii)-(d), (iv)-(a)

ugcnetcse-june2012-paper3 theory-of-computation

Answer key

## 39.0.19 UGC NET CSE | June 2013 | Part 2 | Question: 24 top

Given a Non-deterministic Finite Automaton (NFA) with states p and r as initial and final states respectively and transition table as given below :

| | a | b |
|---|---|---|
| p | - | q |
| q | r | s |
| r | r | s |
| s | r | s |

The minimum number of states required in Deterministic Finite Automaton (DFA) equivalent to NFA is

A. $5$ B. $4$ C. $3$ D. $2$

ugcnetcse-june2013-paper2 theory-of-computation

Answer key

## 39.0.20 UGC NET CSE | December 2013 | Part 3 | Question: 21 top

Given the following statements:

$S_1$ : The grammars $S \rightarrow asb \mid bsa \mid ss \mid a$ and $S \rightarrow asb \mid bsa \mid a$ are not equivalent.

$S_2$ : The grammars $S \rightarrow ss \mid sss \mid asb \mid bsa \mid \lambda$ and $S \rightarrow ss \mid asb \mid bsa \mid \lambda$ are equivalent.

A. $S_1$ is correct and $S_2$ is not correct
B. Both $S_1$ ad $S_2$ are correct
C. $S_1$ is not correct and $S_2$ is correct
D. Both $S_1$ ad $S_2$ are not correct

ugcnetcse-dec2013-paper3 theory-of-computation

Answer key

## 39.0.21 UGC NET CSE | December 2007 | Part 2 | Question: 3 top

A context free grammar is :

A. type $0$ B. type $1$ C. type $2$ D. type $3$

ugcnetcse-dec2007-paper2

Answer key

## 39.0.22 UGC NET CSE | December 2015 | Part 3 | Question: 73 top

Consider Language $A$ defined over the alphabet $\Sigma = \{0, 1\}$ as $A = \{0^{\lfloor n/2 \rfloor} 1^n : n >= 0\}$

The expression $\lfloor n/2 \rfloor$ means the floor of $n/2$, or what you get by rounding $n/2$ down to the nearest integer.

Which of the following is not an example of a string in $A$?

A. $011$ B. $0111$ C. $0011$ D. $001111$

ugcnetcse-dec2015-paper3 theory-of-computation

Answer key

## 39.0.23 UGC NET CSE | December 2014 | Part 3 | Question: 63 top

According to pumping lemma for context free languages :

Let $L$ be an infinite context free language, then there exists some positive integer m such that any $w \in L$ with $|w| \geq m$ can be decomposed as $w = uvxyz$

A. With $|vxy| \leq m$ such that $uv^ixy^iz \in L$ for all $i = 0, 1, 2$
B. With $|vxy| \leq m$, and $|vy| \geq 1$, such that $uv^ixy^iz \in L$ for all $i = 0, 1, 2, \ldots\ldots.$
C. With $|vxy| \geq m$, and $|vy| \leq 1$, such that $uv^ixy^iz \in L$ for all $i = 0, 1, 2, \ldots\ldots.$
D. With $|vxy| \geq m$, and $|vy| \geq 1$, such that $uv^ixy^iz \in L$ for all $i = 0, 1, 2, \ldots\ldots.$

ugcnetcse-dec2014-paper3 theory-of-computation

Answer key

## 39.0.24 UGC NET CSE | June 2009 | Part 2 | Question: 35 top

Any syntactic construct that can be described by a regular expression can also be described by a :

A. Context sensitive grammar
B. Non context free grammar
C. Context free grammar
D. None of the above

ugcnetcse-june2009-paper2

Answer key

### 39.0.25 UGC NET CSE | June 2013 | Part 3 | Question: 39 top

Match the following :

| | | | |
|---|---|---|---|
| a. | Context sensitive language | i. | Deterministic finite automation |
| b. | Regular grammar | ii. | Recusive enumerable |
| c. | Conext free grammar | iii. | Recursive language |
| d. | Unrestricted grammar | iv. | Pushdown automation |

**Codes:**

A. a-ii, b-i, c-iv, d-iii
B. a-iii, b-iv, c-i, d-ii
C. a-iii, b-i, c-iv, d-ii
D. a-ii, b-iv, c-i, d-iii

ugcnetcse-june2013-paper3 theory-of-computation

Answer key

### 39.0.26 UGC NET CSE | June 2013 | Part 3 | Question: 40 top

The statements s1 and s2 are given as:

s1: Context sensitive languages are closed under intersection, concatenation, substitution and inverse homomorphism.

s2: Context sensitive languages are closed under concatenation, substitution and homomorphism.

Which of the following is correct statement?

A. Both s1 and s2 are correct
B. s1 is correct s2 is not correct
C. s1 is not correct s2 is correct
D. Both s1 and s2 are not correct

ugcnetcse-june2013-paper3 theory-of-computation

Answer key

## 39.1 Closure Property (2) top

### 39.1.1 Closure Property: UGC NET CSE | December 2012 | Part 3 | Question: 38 top

Which is not the correct statement?

A. The class of regular sets is closed under homomorphisms
B. The class of regular sets is not closed under inverse homomorphisms
C. The class of regular sets is closed under quotient
D. The class of regular sets is closed under substitution

ugcnetcse-dec2012-paper3 theory-of-computation closure-property

Answer key

### 39.1.2 Closure Property: UGC NET CSE | June 2012 | Part 2 | Question: 40 top

Consider the following statements:

I. Recursive languages are closed under complementation
II. Recursively enumerable languages are closed under union
III. Recursively enumerable languages are closed under complementation

Which of the above statements are true?

A. I only
B. I and II
C. I and III
D. II and III

theory-of-computation closure-property ugcnetcse-june2012-paper2

Answer key

## 39.2 Complement (1) top

### 39.2.1 Complement: UGC NET CSE | August 2016 | Part 3 | Question: 23 top

Let $\Sigma = a, b$ and language $L = aa, bb$. Then, the complement of $L$ is

A. $\{\lambda, a, b, ab, ba\} \cup \{w \in \{a,b\}^* | |w| > 3\}$
B. $\{a, b, ab, ba\} \cup \{w \in \{a,b\}^* | |w| \geq 3\}$
C. $\{w \in \{a,b\}^* | |w| > 3\} \cup \{a, b, ab, ba\}$
D. $\{\lambda, a, b, ab, ba\} \cup \{w \in \{a,b\}^* | |w| \geq 3\}$

ugcnetcse-aug2016-paper3 theory-of-computation complement

Answer key

## 39.3 Conjunctive Normal Form (1) top

### 39.3.1 Conjunctive Normal Form: UGC NET CSE | July 2018 | Part 2 | Question: 35 top

To obtain a string of n Terminals from a given Chomsky normal from grammar, the number of productions to be used is

A. $2n - 1$ B. $2n$ C. $n + 1$ D. $n^2$

ugcnetcse-july2018-paper2 theory-of-computation conjunctive-normal-form

Answer key

## 39.4 Context Free Grammar (8) top

### 39.4.1 Context Free Grammar: UGC NET CSE | August 2016 | Part 3 | Question: 57 top

Let $G = (V, T, S, P)$ be a context-free grammar such that every one of its productions is of the form $A \to \nu$, with $|\nu| = k > 1$. The derivation tree for any string $W \in L(G)$ has a height such that

A. $h < \frac{(|W|-1)}{k-1}$
B. $\log_k |W| \leq h$
C. $\log_k |W| < h < \frac{(|W|-1)}{k-1}$
D. $\log_k |W| \leq h \leq \frac{(|W|-1)}{k-1}$

ugcnetcse-aug2016-paper3 theory-of-computation context-free-grammar

### 39.4.2 Context Free Grammar: UGC NET CSE | December 2009 | Part 2 | Question: 34 top

Contex-free Grammar (CFG) can be recognized by

(A) Finite state automata
(B) 2-way linear bounded automata
(C) push down automata
(D) both (B) and (C)

ugcnetcse-dec2009-paper2 theory-of-computation context-free-grammar

Answer key

### 39.4.3 Context Free Grammar: UGC NET CSE | December 2013 | Part 2 | Question: 27 top

The context free grammar for the language:
$L = \{a^n b^m \mid n \leq m + 3, n \geq 0, m \geq 0\}$ is

A. $S \to aaa \quad A; A \to aAb \mid B, B \to Bb \mid \lambda$
B. $S \to aaaA \mid \lambda, A \to aAb \mid B, B \to Bb \mid \lambda$
C. $S \to aaaA \mid aaA \mid \lambda, A \to aAb \mid B, B \to Bb \mid \lambda$
D. $S \to aaaA \mid aa \quad A \mid aA \mid \lambda, A \to aAb \mid B, B \to Bb \mid \lambda$

ugcnetcse-dec2013-paper2 theory-of-computation context-free-grammar

Answer key

## 39.4.4 Context Free Grammar: UGC NET CSE | December 2014 | Part 2 | Question: 35 top

The following Context-Free Grammar (CFG) :

$S \rightarrow aB|bA$

$A \rightarrow a|as|bAA$

$B \rightarrow b|bs|aBB$

will generate

A. Odd numbers of $a's$ and odd numbers of $b's$
B. Even numbers of $a's$ and even numbers of $b's$
C. Equal numbers of $a's$ and $b's$
D. Different numbers of $a's$ and $b's$

ugcnetcse-dec2014-paper2 theory-of-computation context-free-grammar

Answer key

## 39.4.5 Context Free Grammar: UGC NET CSE | January 2017 | Part 3 | Question: 22 top

Let $G = (V, T, S, P)$ be a context-free grammer such that every one of its productions is of the form $A \rightarrow v$, with $|v| = K > 1$. The derivation tree for any $W \in L(G)$ has a height $h$ such that

A. $\log_K |W| \leq h \leq \log_K \left(\frac{|W|-1}{K-1}\right)$

B. $\log_K |W| \leq h \leq \log_K (K|W|)$

C. $\log_K |W| \leq h \leq K \log_K |W|$

D. $\log_K |W| \leq h \leq \left(\frac{|W|-1}{K-1}\right)$

ugcnetcse-jan2017-paper3 context-free-grammar theory-of-computation

Answer key

## 39.4.6 Context Free Grammar: UGC NET CSE | June 2012 | Part 3 | Question: 28 top

Which one of the following is not a Greibach Normal form grammar?

(i) $S \rightarrow a \mid bA \mid aA \mid bB$, $A \rightarrow a$, $B \rightarrow b$

(ii) $S \rightarrow a \mid aA \mid AB$, $A \rightarrow a$, $B \rightarrow b$

(iii) $S \rightarrow a \mid A \mid aA$, $A \rightarrow a$

A. (i) and (ii)
B. (i) and (iii)
C. (ii) and (iii)
D. (i), (ii) and (iii)

ugcnetcse-june2012-paper3 theory-of-computation context-free-grammar

Answer key

## 39.4.7 Context Free Grammar: UGC NET CSE | June 2013 | Part 3 | Question: 38 top

For every context free grammar (G) there exists an algorithm that passes any $w \in L(G)$ in number of steps proportional to

A. $ln|w|$
B. $|w|$
C. $|w|^2$
D. $|w|^3$

ugcnetcse-june2013-paper3 theory-of-computation context-free-grammar

Answer key

### 39.4.8 Context Free Grammar: UGC NET CSE | Junet 2015 | Part 3 | Question: 61 top

A context free grammar for $L = \{w \mid n_0(w) > n_1(w)\}$ is given by:

A. $S \rightarrow 0 \mid 0S \mid 1SS$
B. $S \rightarrow 0S \mid 1S \mid 0SS \mid 1SS \mid 0 \mid 1$
C. $S \rightarrow 0 \mid 0S \mid 1SS \mid S1S \mid SS1$
D. $S \rightarrow 0S \mid 1S \mid 0 \mid 1$

ugcnetcse-june2015-paper3 theory-of-computation context-free-grammar

Answer key

## 39.5 Context Free Language (8) top

### 39.5.1 Context Free Language: UGC NET CSE | December 2011 | Part 2 | Question: 38 top

Which one of the following statement is false ?

A. Context-free languages are closed under union.
B. Context-free languages are closed under concatenation.
C. Context-free languages are closed under intersection.
D. Context-free languages are closed under Kleene closure.

ugcnetcse-dec2011-paper2 theory-of-computation context-free-language

Answer key

### 39.5.2 Context Free Language: UGC NET CSE | December 2018 | Part 2 | Question: 36 top

Consider $R$ to be any regular language and $L_1$, $L_2$ be any two context-free languages. Which of the following is correct?

A. $\overline{L_1}$ is context free
B. $\overline{(L_1 \cup L_2)} - R$ is context free
C. $L_1 \cap L_2$ is context free
D. $L_1 - R$ is context free

ugcnetcse-dec2018-paper2 context-free-language theory-of-computation

Answer key

### 39.5.3 Context Free Language: UGC NET CSE | January 2017 | Part 3 | Question: 23 top

Given the following two languages:

$L_1 = \{a^n b^n \mid n \geq 0,\ n \neq 100\}$

$L_2 = \{w \in \{a, b, c\}^* \mid n_a(w) = n_b(w) = n_c(w)\}$

Which of the following options is correct?

A. Both $L_1$ and $L_2$ are not context free language
B. Both $L_1$ and $L_2$ are context free language
C. $L_1$ is context free language, $L_2$ is not context free language
D. $L_1$ is not context free language, $L_2$ is context free language

ugcnetcse-jan2017-paper3 theory-of-computation context-free-language

Answer key

### 39.5.4 Context Free Language: UGC NET CSE | June 2012 | Part 3 | Question: 39 top

The following CFG $S \rightarrow aB \mid bA, A \rightarrow a \mid as \mid bAA, B \rightarrow b \mid bs \mid aBB$ generates strings of terminals that have

A. odd number of a's and odd number of b's
B. even number of a's and even number of b's

C. equal number of a's and b's

D. not equal number of a's and b's

ugcnetcse-june2012-paper3 theory-of-computation context-free-language

Answer key

### 39.5.5 Context Free Language: UGC NET CSE | June 2014 | Part 2 | Question: 09 top

The context free grammar for the language $L = \left\{a^n b^m c^k \mid k = \mid n - m \mid, n \geq 0, m \geq 0, k \geq 0\right\}$ is

A. $S \rightarrow S_1 S_3, S_1 \rightarrow aS_1 c \mid S_2 \mid \lambda, S_2 \rightarrow aS_2 b \mid \lambda, S_3 \rightarrow aS_3 b \mid S_4 \mid \lambda, S_4 \rightarrow bS_4 c \mid \lambda$
B. $S \rightarrow S_1 S_3, S_1 \rightarrow aS_1 S_2 c \mid \lambda, S_2 \rightarrow aS_2 b \mid \lambda, S_3 \rightarrow aS_3 b \mid S_4 \mid \lambda, S_4 \rightarrow bS_4 c \mid \lambda$
C. $S \rightarrow S_1 \mid S_2, S_1 \rightarrow aS_1 S_2 c \mid \lambda, S_2 \rightarrow aS_2 b \mid \lambda, S_3 \rightarrow aS_3 b \mid S_4 \mid \lambda, S_4 \rightarrow bS_4 c \mid \lambda$
D. $S \rightarrow S_1 \mid S_3, S_1 \rightarrow aS_1 c \mid S_2 \mid \lambda, S_2 \rightarrow aS_2 b \mid \lambda, S_3 \rightarrow aS_3 b \mid S_4 \mid \lambda, S_4 \rightarrow bS_4 c \mid \lambda$

ugcnetcse-june2014-paper2 theory-of-computation context-free-language

Answer key

### 39.5.6 Context Free Language: UGC NET CSE | June 2016 | Part 3 | Question: 56 top

Let $L = \{0^n 1^n | n \geq 0\}$ be a context free language. Which of the following is correct?

A. $\overline{L}$ is context free and $L^k$ is not context free for any $k \geq 1$
B. $\overline{L}$ is not context free and $L^k$ is context free for any $k \geq 1$
C. Both $\overline{L}$ and $L^k$ for any $k \geq 1$ are context free
D. Both $\overline{L}$ and $L^k$ for any $k \geq 1$ are not context free

ugcnetcse-june2016-paper3 context-free-language

Answer key

### 39.5.7 Context Free Language: UGC NET CSE | June 2019 | Part 2 | Question: 77 top

How can the decision algorithm be constructed for deciding whether context-free language $L$ is finite?

a. By constructing redundant CFG or redundant CNF generating the language $L$
b. By constructing redundant CFG or redundant CNF generating the language $L$
c. By constructing redundant CFG or redundant CNF generating the language $L$

Which of the following is correct?

generating language $L - \{\wedge$

A. a only
B. b only
C. c only
D. None of a, b and c

ugcnetcse-june2019-paper2 context-free-language

Answer key

### 39.5.8 Context Free Language: UGC NET CSE | October 2020 | Part 2 | Question: 29 top

Which of the following statements is true?

A. The union of two context free languages is context free
B. The intersection of two context free languages is context free
C. The complement of a context free language is context free
D. If a language is context free, it can always be accepted by a deterministic pushdown automaton

ugcnetcse-oct2020-paper2 theory-of-computation context-free-language

Answer key

## 39.6 Context Sensitive (2) top

### 39.6.1 Context Sensitive: UGC NET CSE | December 2015 | Part 3 | Question: 22 top

The family of context sensitive languages is _____ under union and ____ under reversal

A. closed, not closed
B. not closed, not closed
C. closed, closed
D. not closed, closed

ugcnetcse-dec2015-paper3 theory-of-computation closure-property context-sensitive

Answer key

### 39.6.2 Context Sensitive: UGC NET CSE | July 2018 | Part 2 | Question: 37 top

Context sensitive language can be recognized by a

A. Finite state machine
B. Deterministic finite automata
C. Non-deterministic finite automata
D. Linear bounded automata

ugcnetcse-july2018-paper2 theory-of-computation context-sensitive

Answer key

## 39.7 Decidability (5) top

### 39.7.1 Decidability: UGC NET CSE | December 2018 | Part 2 | Question: 37 top

Consider the following problems :

A. Whether a finite state automaton halts on all inputs?
B. Whether a given context free language is regular?
C. Whether a Turing machine computes the product of two numbers?

Which one of the following is correct?

A. Only i and iii are undecidable problems
B. Only ii and iii are undecidable problems
C. Only i and ii are undecidable problems
D. i, ii and iii are undecidable problems

ugcnetcse-dec2018-paper2 decidability theory-of-computation

Answer key

### 39.7.2 Decidability: UGC NET CSE | June 2019 | Part 2 | Question: 79 top

Which of the following problems is/are decidable problem(s) (recursively enumerable) on turing machine $M$?

a. $G$ is a CFG with $L(G) = \phi$
b. There exist two TMs $M_1$ and $M_2$ such that $L(M_1) \subseteq L(M_2)$
c. $M$ is a TM that accepts $L(M)$ using at most 2 cells of tape

A. a and b only
B. a only
C. a, b and c
D. c only

ugcnetcse-june2019-paper2 decidability turing-machine

Answer key

### 39.7.3 Decidability: UGC NET CSE | November 2017 | Part 3 | Question: 22 top

Which of the following problems is undecidable?

A. To determine if two finite automata are equivalent
B. Membership problem for context free grammar
C. Finiteness problem for finite automata
D. Ambiguity problem for context free grammar

ugcnetcse-nov2017-paper3 theory-of-computation decidability

Answer key

### 39.7.4 Decidability: UGC NET CSE | October 2020 | Part 2 | Question: 55 top

Let $G_1$ and $G_2$ be arbitrary context free languages and $R$ an arbitrary regular language. Consider the following problems:

a. Is $L(G_1) = L(G_2)$?
b. Is $L(G_2) \leq L(G_1)$?
c. Is $L(G_1) = R$?

Which of the problems are undecidable? Choose the correct answer from the options given below:

A. $(a)$ only B. $(b)$ only C. $(a)$ and $(b)$ only D. $(a)$, $(b)$ and $(c)$

ugcnetcse-oct2020-paper2 theory-of-computation decidability

Answer key

### 39.7.5 Decidability: UGC NET CSE | October 2020 | Part 2 | Question: 87 top

Given below are two statements:

Statement $I$: The problem "Is $L_1 \wedge L_2 = \phi$?" is undecidable for context sensitive languages $L_1$ and $L_2$

Statement $II$: The problem "Is $W \in L$?" is decidable for context sensitive language $L$. (where $W$ is a string).

In the light of the above statements, choose the correct answer from the options given below

A. Both Statement $I$ and Statement $II$ are true
B. Both Statement $I$ and Statement $II$ are false
C. Statement $I$ is correct but Statement $II$ is false
D. Statement $I$ is incorrect but Statement $II$ is true

ugcnetcse-oct2020-paper2 theory-of-computation decidability

Answer key

## 39.8 Expression (1) top

### 39.8.1 Expression: UGC NET CSE | December 2015 | Part 3 | Question: 26 top

The context free grammar given by

$S \rightarrow XYX$
$X \rightarrow aX \mid bX \mid \lambda$
$Y \rightarrow bbb$

generates the language which is defined by regular expression:

A. $(a+b)^*bbb$
B. $abbb(a+b)^*$
C. $(a+b)^*(bbb)(a+b)^*$
D. $(a+b)(bbb)(a+b)^*$

theory-of-computation regular-expression finite-automata expression ugcnetcse-dec2015-paper3

Answer key

## 39.9 Finite Automata (10) top

### 39.9.1 Finite Automata: UGC NET CSE | December 2012 | Part 2 | Question: 44 top

Let L be set accepted by a non-deterministic finite automaton. The number of states in non-deterministic finite automaton is $|Q|$. The maximum number of states in equivalent finite automaton that accepts L is

A. $|Q|$
B. $2 \mid Q|$
C. $2^{|Q|} - 1$
D. $2^{|Q|}$

ugcnetcse-dec2012-paper2 theory-of-computation finite-automata

Answer key

### 39.9.2 Finite Automata: UGC NET CSE | December 2012 | Part 3 | Question: 47 top

The minimum number of states of the non-deterministic finite automaton which accepts the language $\{abab^n \mid n \geq 0\} \cup \{aba^n \mid n \geq 0\}$ is

A. 3 B. 4 C. 5 D. 6

ugcnetcse-dec2012-paper3 theory-of-computation finite-automata

Answer key

### 39.9.3 Finite Automata: UGC NET CSE | December 2018 | Part 2 | Question: 32 top

Consider the language $L$ given by

$$L = \{2^{nk} \mid k > 0, \text{ and n is non-negative integer number } \}$$

The minimum number of states of finite automaton which accepts the language $L$ is

A. $n$ B. $n+1$ C. $\frac{n(n+1)}{2}$ D. $2^n$

ugcnetcse-dec2018-paper2 theory-of-computation finite-automata

Answer key

## 39.9.4 Finite Automata: UGC NET CSE | July 2018 | Part 2 | Question: 31 top

Two finite state machines are said to be equivalent if they:

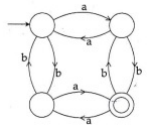
A. Have the same number of edges
B. Have the same number of states
C. Recognize the same set of tokens
D. Have the same number of states and edges

ugcnetcse-july2018-paper2 theory-of-computation finite-automata

Answer key

## 39.9.5 Finite Automata: UGC NET CSE | July 2018 | Part 2 | Question: 32 top

The finite state machine given in figure below recognizes:




A. anu string of odd number of a's
B. anu string of odd number of b's
C. any string of even number of a's and odd number of b's
D. any string of odd number of a's and odd number of b's

ugcnetcse-july2018-paper2 theory-of-computation finite-automata

Answer key

## 39.9.6 Finite Automata: UGC NET CSE | June 2012 | Part 3 | Question: 16 top

Given the following statements:

I. The power of deterministic finite state machine and non- deterministic finite state machine are same.
II. The power of deterministic pushdown automaton and non- deterministic pushdown automaton are same.

Which of the above is the correct statement(s)?

A. Both I and II B. Only I C. Only II D. Neither I nor II

ugcnetcse-june2012-paper3 theory-of-computation finite-automata

Answer key

## 39.9.7 Finite Automata: UGC NET CSE | Junet 2015 | Part 3 | Question: 19 top

Minimal deterministic finite automaton for the language $L = \{0^n \mid n \geq 0, n \neq 4\}$ will have:

A. 1 final state among 5 states
B. 4 final states among 5 states
C. 1 final state among 6 states
D. 5 final state among 6 states

ugcnetcse-june2015-paper3 theory-of-computation finite-automata

Answer key

## 39.9.8 Finite Automata: UGC NET CSE | Junet 2015 | Part 3 | Question: 21 top

The transition function for the language $L = \{w \mid n_a(w) \text{ and } n_b(w) \text{ are both odd}\}$ is given by:

$\delta(q_0, a) = q_1$ ; $\delta(q_0, b) = q_2$

$\delta(q_1, a) = q_0$ ; $\delta(q_1, b) = q_3$

$\delta(q_2, a) = q_3$ ; $\delta(q_2, b) = q_0$

$\delta(q_3, a) = q_2$ ; $\delta(q_3, b) = q_1$

The initial and final states of the automata are

A. $q_0$ and $q_0$ respectively
B. $q_0$ and $q_1$ respectively
C. $q_0$ and $q_2$ respectively
D. $q_0$ and $q_3$ respectively

ugcnetcse-june2015-paper3 theory-of-computation finite-automata

Answer key

### 39.9.9 Finite Automata: UGC NET CSE | November 2017 | Part 3 | Question: 23 top

Finite state machine can recognize language generated by _____

A. Only context free grammar
B. Only context sensitive grammar
C. Only regular grammar
D. Any unambiguous grammar

ugcnetcse-nov2017-paper3 theory-of-computation finite-automata

Answer key

### 39.9.10 Finite Automata: UGC NET CSE | September 2013 | Part 2 | Question: 13 top

The number of states in a minimal deterministic finite automaton corresponding to the language $L = \{a^n \mid n \geq 4\}$ is

A. 3
B. 4
C. 5
D. 6

ugcnetsep2013ii theory-of-computation finite-automata

Answer key

## 39.10 Grammar (15) top

### 39.10.1 Grammar: UGC NET CSE | August 2016 | Part 2 | Question: 35 top

Which of the following is FALSE ?

A. The grammar $S \rightarrow aS|aSbS| \in$, where $S$ is the only non-terminal symbol, and $\in$ is the null string, is ambiguous.
B. An unambiguous grammar has same left most and right most derivation.
C. An ambiguous grammar can never be $LR(k)$ for any $k$.
D. Recursive descent parser is a top-down parser.

ugcnetcse-aug2016-paper2 theory-of-computation grammar

Answer key

### 39.10.2 Grammar: UGC NET CSE | December 2012 | Part 3 | Question: 42 top

The grammar 'GI' $S \rightarrow OSO \mid ISI \mid 0 \mid 1 \mid \in$ and the grammar G2 is $S \rightarrow as \mid asb \mid X, X \rightarrow Xa \mid a$. Which is the correct statement?

A. G1 is ambiguous, G2 is unambiguous
B. G1 is unambiguous, G2 is ambiguous
C. Both G1 and G2 are ambiguous
D. Both G1 and G2 are unambiguous

ugcnetcse-dec2012-paper3 theory-of-computation grammar

Answer key

### 39.10.3 Grammar: UGC NET CSE | December 2014 | Part 3 | Question: 62 top

Match the following **:**

| | List – I | | List – II |
|---|---|---|---|
| a. | Context free grammar | i. | Linear bounded automaton |
| b. | Regular grammar | ii. | Pushdown automaton |
| c. | Context sensitive grammar | iii. | Turing machine |
| d. | Unrestricted grammar | iv. | Deterministic finite automaton |

**Codes :**

A. a-ii, b-iv, c-iii, d-i
B. a-ii, b-iv, c-i, d-iii
C. a-iv, b-i, c-ii, d-iii
D. a-i, b-iv, c-iii, d-ii

ugcnetcse-dec2014-paper3 theory-of-computation grammar

Answer key

## 39.10.4 Grammar: UGC NET CSE | July 2018 | Part 2 | Question: 36 top

Consider the following two Grammars:

$G_1 \ : \ S \rightarrow SbS \mid a$

$G_2 : S \rightarrow aB \mid ab, \ A \rightarrow GAB \mid a, \ B \rightarrow ABb \mid b$

Which one of the folloeing options is correct?

A. Only $G_1$ is ambiguous
B. Only $G_2$ is ambiguous
C. Both $G_1$ and $G_2$ are ambiguous
D. Both $G_1$ and $G_2$ are not ambiguous

ugcnetcse-july2018-paper2 theory-of-computation grammar

Answer key

## 39.10.5 Grammar: UGC NET CSE | July 2018 | Part 2 | Question: 38 top

The set $A = \{0^n \ 1^n \ 2^n \ \mid n = 1, 2, 3, \ldots\}$ is an example of a grammar that is

A. Context sensitive
B. Context free
C. Regular
D. None of the above

ugcnetcse-july2018-paper2 theory-of-computation grammar

Answer key

## 39.10.6 Grammar: UGC NET CSE | June 2012 | Part 3 | Question: 32 top

The equivalent grammar corresponding to the grammar $G : S \rightarrow aA, A \rightarrow BB, B \rightarrow aBb \mid \varepsilon$ is

A. $S \rightarrow aA, A \rightarrow BB, B \rightarrow aBb$
B. $S \rightarrow a \mid aA, A \rightarrow BB, B \rightarrow aBb \mid ab$
C. $S \rightarrow a \mid aA, A \rightarrow BB \mid B, B \rightarrow aBb$
D. $S \rightarrow a \mid aA, A \rightarrow BB \mid B, B \rightarrow aBb \mid ab$

theory-of-computation grammar context-free-language ugcnetcse-june2012-paper3

Answer key

## 39.10.7 Grammar: UGC NET CSE | June 2013 | Part 3 | Question: 35 top

Which of the following is/are the fundamental semantic model(s) of parameter passing?

A. in mode
B. out mode
C. in-out mode
D. all of the above

ugcnetcse-june2013-paper3 theory-of-computation grammar

Answer key

## 39.10.8 Grammar: UGC NET CSE | June 2014 | Part 3 | Question: 73 top

Given the following two grammars :

$G_1 : S \rightarrow AB|aaB$

$A \rightarrow a|Aa$

$B \rightarrow b$

$G_2 : S \rightarrow aSbS|bSaS|\lambda$

Which statement is correct ?

A. $G_1$ is unambiguous and $G_2$ is unambiguous.
B. $G_1$ is unambiguous and $G_2$ is ambiguous.
C. $G_1$ is ambiguous and $G_2$ is unambiguous.
D. $G_1$ is ambiguous and $G_2$ is ambiguous.

ugcnetjune2014iii theory-of-computation grammar

Answer key

## 39.10.9 Grammar: UGC NET CSE | June 2014 | Part 3 | Question: 74 top

Match the following :

| | **List – I** | | **List – II** |
|---|---|---|---|
| a. | Chomsky Normal form | i. | $S \rightarrow bSS \mid aS \mid c$ |
| b. | Greibach Normal form | ii. | $S \rightarrow aSb \mid ab$ |
| c. | S-grammar | iii. | $S \rightarrow AS \mid a$<br>$A \rightarrow SA \mid b$ |
| d. | LL grammar | iv. | $S \rightarrow aBSB$<br>$B \rightarrow b$ |

**Codes :**

A. a-iv, b-iii, c-i, d-ii
B. a-iv, b-iii, c-ii, d-i
C. a-iii, b-iv, c-i, d-ii
D. a-iii, b-iv, c-ii, d-i

ugcnetjune2014iii theory-of-computation grammar

Answer key

## 39.10.10 Grammar: UGC NET CSE | Junet 2015 | Part 2 | Question: 33 top

If all the production rules have single non-terminal symbol on the left side, the grammar defined is:

A. Context free grammar
B. Context sensitive grammar
C. Unrestricted grammar
D. Phase grammar

ugcnetcse-june2015-paper2 theory-of-computation grammar

Answer key

## 39.10.11 Grammar: UGC NET CSE | November 2017 | Part 2 | Question: 34 top

Which of the following statements is/are TRUE?

a. The grammar $S \rightarrow SS \mid a$ is ambiguous. (Where $S$ is the start symbol)

b. The grammar $S \rightarrow 0S1 \mid 01S \mid \epsilon$ is ambiguous. (The special symbol $\epsilon$ represents the empty string) (Where $S$ is the start symbol)

c. The grammar (Where $S$ is the start symbol)

```
S -> T/U$
T -> x S y | xy | ϵ
U -> yT
```

generates a language consisting of the string $yxxyy$.

A. Only (a) and (b) are TRUE.
B. Only (a) and (c) are TRUE.
C. Only (b) and (c) are TRUE.
D. All of (a), (b) and (c) are TRUE.

ugcnetcse-nov2017-paper2 grammar context-free-language ambiguous

Answer key

## 39.10.12 Grammar: UGC NET CSE | October 2020 | Part 2 | Question: 57 top

Which of the following grammars is(are) ambiguous?

a. $s \to ss \mid asb \mid bsa \mid b\lambda$ b. $s \to asbs \mid bsas \mid \lambda$ c.

$$s \to aAB$$
$$A \to bBb$$
$$B \to A \mid \lambda \text{ where } \lambda \text{ denotes empty string}$$

Choose the correct answer from the options given below:

A. $(a)$ and $(c)$ only B. $(b)$ only C. $(b)$ and $(c)$ only D. $(a)$ and $(b)$ only

ugcnetcse-oct2020-paper2 theory-of-computation grammar ambiguous

Answer key

## 39.10.13 Grammar: UGC NET CSE | September 2013 | Part 2 | Question: 16 top

LL grammar for the language $L = \{a^n b^m c^{n+m} \mid m \geq 0, n \geq 0\}$ is

A. $S \to aSc \mid S_1; S_1 \to bS_1c \mid \lambda$
B. $S \to aSc \mid S_1\lambda \mid S_1 \mid \lambda; S_1 \to bS_1c$
C. $S \to aSc \mid S_1\lambda \mid S_1 \mid \lambda; S_1 \to bS_1c \mid \lambda$
D. $S \to aSc \mid S_1\lambda; S_1 \to bS_1c \mid \lambda$

ugcnetsep2013ii theory-of-computation grammar

Answer key

## 39.10.14 Grammar: UGC NET CSE | September 2013 | Part 2 | Question: 17 top

Assume the statements $S_1$ and $S_2$ given as:

$S_1$: Given a context free grammar G, there exists an algorithm for determining whether L(G) is infinite.

$S_2$: There exists an algorithm to determine whether two context free grammars generate the same language.

Which one of the following is true?

A. $S_1$ is correct and $S_2$ is not correct
B. Both $S_1$ and $S_2$ are correct
C. Both $S_1$ and $S_2$ are not correct
D. $S_1$ is not correct and $S_2$ is correct

ugcnetsep2013ii theory-of-computation grammar

Answer key

## 39.10.15 Grammar: UGC NET CSE | September 2013 | Part 3 | Question: 18 top

Given the following production of a grammar:

$S \to aA \mid aBB;$

$A \to aaA \mid \lambda;$

$B \to bB \mid bbC;$

$C \to B$

Which of the following is true?

A. The language corresponding to the given grammar is a set of even number of a's
B. The language corresponding to the given grammar is a set of odd number of a's
C. The language corresponding to the given grammar is a set of even number of a's followed by odd number of b's
D. The language corresponding to the given grammar is a set of odd number of a's followed by even number of b's

ugcnetcse-sep2013-paper3 theory-of-computation grammar

Answer key

## 39.11 Identify Class Language (8) top

## 39.11.1 Identify Class Language: UGC NET CSE | December 2015 | Part 3 | Question: 28 top

Given the following two languages:

- $L_1 = \{a^n b a^n \mid n > 0\}$
- $L_2 = \{a^n b a^n b^{n+1} \mid n > 0\}$

Which of the following is correct?

A. $L_1$ is context free language and $L_2$ is not context free language
B. $L_1$ is not context free language and $L_2$ is context free language
C. Both $L_1$ and $L_2$ are context free languages
D. Both $L_1$ and $L_2$ are not context free languages

identify-class-language context-free-language ugcnetcse-dec2015-paper3

Answer key

## 39.11.2 Identify Class Language: UGC NET CSE | December 2019 | Part 2 | Question: 48 top

Consider the following languages:

$L_1 = \{a^n b^n c^m\} \cup \{a^n b^m c^m\}, n, m \geq 0$

$L_2 = \{ww^R \mid w \in \{a, b\}^*\}$ Where $R$ represents reversible operation.

Which one of the following is (are) inherently ambiguous languages(s)?

A. Only $L_1$
B. Only $L_2$
C. both $L_1$ and $L_2$
D. neither $L_1$ nor $L_2$

ugcnetcse-dec2019-paper2 identify-class-language

Answer key

## 39.11.3 Identify Class Language: UGC NET CSE | January 2017 | Part 3 | Question: 61 top

Given the following two statements:

A. $L = \{w \mid n_a(w) = n_b(w)\}$ is deterministic context free language, but not linear.
B. $L = \{a^n b^n\} \cup \{a^n b^{2n}\}$ is linear, but not deterministic context free language.

Which of the following options is correct?

A. Both (A) and (B) are false.
B. Both (A) and (B) are true.
C. (A) is true, (B) is false.
D. (A) is false, (B) is true.

ugcnetcse-jan2017-paper3 identify-class-language

Answer key

## 39.11.4 Identify Class Language: UGC NET CSE | June 2014 | Part 3 | Question: 75 top

Given the following two languages :

$L_1 = \{a^n b^n | n \geq 1\} \cup \{a\}$

$L_2 = \{wCw^R | w \in \{a, b\}^*\}$

Which statement is correct ?

A. Both $L_1$ and $L_2$ are not deterministic.
B. $L_1$ is not deterministic and $L_2$ is deterministic.
C. $L_1$ is deterministic and $L_2$ is not deterministic.
D. Both $L_1$ and $L_2$ are deterministic.

ugcnetjune2014iii theory-of-computation identify-class-language

Answer key

## 39.11.5 Identify Class Language: UGC NET CSE | October 2020 | Part 2 | Question: 71 top

Match List I with List II

$L_R$ : Regular language, $LCF$: Context free language

$L_{REC}$ : Recursive langauge, $L_{RE}$: Recursively enumerable language.

| | List I | | List II |
|---|---|---|---|
| $(A)$ | Recursively Enumerable language | $(I)$ | $\overline{L}_{REC} \cup L_{RE}$ |
| $(B)$ | Recursive language | $(II)$ | $\overline{L}_{CF} \cup L_{REC}$ |
| $(C)$ | Context Free language | $(III)$ | $L_R^* \cap L_{CF}$ |

Choose the correct answer from the options given below:

A. $A-II, B-III, C-I$
B. $A-III, B-I, C-II$
C. $A-I, B-II, C-III$
D. $A-II, B-I, C-III$

ugcnetcse-oct2020-paper2 theory-of-computation identify-class-language

Answer key

### 39.11.6 Identify Class Language: UGC NET CSE | September 2013 | Part 3 | Question: 19 top

The language accepted by the non-deterministic pushdown automaton

$M = (\{q_0, q_1, q_2\}, \{a, b\}, \{a, b, z\}, \delta, q_0, z, \{q_2\})$ with transitions

$\delta(q_0 a, z) = \{(q_1 a), (q_2 \lambda)\}$;

$\delta(q_1, b, a) = \{(q_1, b)\}$

$\delta(q_1, b, b) = \{(q_1 b)\}, \delta(q_1, a, b) = \{(q_2, \lambda)\}$ is

A. $L(abb*a)$
B. $\{a\}UL(abb*a)$
C. $L(ab*a)$
D. $\{a\}UL(ab*a)$

ugcnetcse-sep2013-paper3 theory-of-computation identify-class-language

Answer key

### 39.11.7 Identify Class Language: UGC NET CSE | September 2013 | Part 3 | Question: 20 top

The language $L = \{a^n b^n a^m b^m \mid n \geq 0, m \geq 0\}$ is

A. Context free but not linear
B. Context free and linear
C. Not context free and not linear
D. Not context free but linear

ugcnetcse-sep2013-paper3 theory-of-computation identify-class-language

Answer key

### 39.11.8 Identify Class Language: UGC NET CSE | September 2013 | Part 3 | Question: 21 top

Assume statements $S_1$ and $S_2$ defined as:

$S_1$: $L_2 - L_1$ is recursive enumerable where $L_1$ and $L_2$ are recursive and recursive enumerable respectively.

$S_2$: The set of all Turing machines is countable.

Which of the following is true?

A. $S_1$ is correct and $S_2$ is not correct
B. Both $S_1$ and $S_2$ are correct
C. Both $S_1$ and $S_2$ are not correct
D. $S_1$ is not correct and $S_2$ is correct

ugcnetcse-sep2013-paper3 identify-class-language theory-of-computation

Answer key

## 39.12 Language (1) top

### 39.12.1 Language: UGC NET CSE | November 2017 | Part 3 | Question: 24 top

The language $L = \{a^i\, b\, c^i \mid i \geq 0\}$ over the alphabet $\{a, b, c\}$ is

A. regular language
B. Not a deterministic context free language but a context free language
C. Recursive and is a deterministic context free language

D. Not recursive

ugcnetcse-nov2017-paper3 theory-of-computation language

Answer key

## 39.13 Languages Classification (1) top

### 39.13.1 Languages Classification: UGC NET CSE | June 2019 | Part 2 | Question: 76 top

Match $\text{List-I}$ with $\text{List-II}$ :

where $L_1$ : Regular language

$L_2$ : Context-free language

$L_3$ : Recursive language

$L_4$ : Recursively enumerable language

| | List-I | | List-II |
|---|---|---|---|
| (a) | $\overline{L_3} \cup L_4$ | (i) | Context-free language |
| (b) | $\overline{L_2} \cup L_3$ | (ii) | Recursively enumerable language |
| (c) | $L_1^* \cap L_2$ | (iii) | Recursive Language |

Choose the correct option from those given below :

A. (a)-(ii); (b)-(i); (c)-(iii)
B. (a)-(ii); (b)-(iii); (c)-(i)
C. (a)-(iii); (b)-(i); (c)-(ii)
D. (a)-(i); (b)-(ii); (c)-(iii)

ugcnetcse-june2019-paper2 languages-classification cfl-recusive-re

Answer key

## 39.14 Languages Relationships (1) top

### 39.14.1 Languages Relationships: UGC NET CSE | December 2014 | Part 3 | Question: 61 top

Given the recursively enumerable language $(L_{RE})$, the context sensitive language $(L_{CS})$, the recursive language $(L_{REC})$, the context free language $(L_{CF})$ and deterministic context free language $(L_{DCF})$. The relationship between these families is given by

A. $L_{CF} \subseteq L_{DCF} \subseteq L_{CS} \subseteq L_{RE} \subseteq L_{REC}$
B. $L_{CF} \subseteq L_{DCF} \subseteq L_{CS} \subseteq L_{REC} \subseteq L_{RE}$
C. $L_{DCF} \subseteq L_{CF} \subseteq L_{CS} \subseteq L_{RE} \subseteq L_{REC}$
D. $L_{DCF} \subseteq L_{CF} \subseteq L_{CS} \subseteq L_{REC} \subseteq L_{RE}$

ugcnetcse-dec2014-paper3 languages-relationships

Answer key

## 39.15 Minimal State Automata (1) top

### 39.15.1 Minimal State Automata: UGC NET CSE | June 2019 | Part 2 | Question: 75 top

How many states are there in a minimum state automata equivalent to regular expression given below?

Regular expression is $a^*b(a+b)$

A. $1$
B. $2$
C. $3$
D. $4$

ugcnetcse-june2019-paper2 finite-automata minimal-state-automata

Answer key

## 39.16 Parsing (1) top

### 39.16.1 Parsing: UGC NET CSE | December 2012 | Part 2 | Question: 35 top

Which of the following is the most powerful parsing method?

A. LL(I) B. Canonical LR C. SLR D. LALR

ugcnetcse-dec2012-paper2 compiler-design parsing

Answer key

## 39.17 Pumping Lemma (3) top

### 39.17.1 Pumping Lemma: UGC NET CSE | December 2013 | Part 3 | Question: 40 top

Pumping lemma for context-free languages states:

Let $L$ be an infinite context free language. Then there exists some positive integer m such that any $w \in L$ with $|w| \geq m$ can be decomposed as $w = uvxyZ$ with $|vxy|$ _____ and $|vy|$ _____ such that $uv^{\dot{z}}xy^{\dot{z}}\ Z \in L$ for all $\dot{z} = 0, 1, 2, \ldots$

A. $\leq m, \leq 1$
B. $\leq m, \geq 1$
C. $\geq m, \leq 1$
D. $\geq m, \geq 1$

ugcnetcse-dec2013-paper3 theory-of-computation context-free-language pumping-lemma

Answer key

### 39.17.2 Pumping Lemma: UGC NET CSE | November 2017 | Part 3 | Question: 19 top

The logic of pumping lemma is an example of _____

A. Iteration
B. Recursion
C. The divide and conquer principle
D. The pigeon – hole principle

ugcnetcse-nov2017-paper3 theory-of-computation pumping-lemma

Answer key

### 39.17.3 Pumping Lemma: UGC NET CSE | November 2017 | Part 3 | Question: 21 top

Pumping lemma for regular language is generally used for proving

A. Whether two given regular expressions are equivalent
B. A given grammar is ambiguous
C. A given grammar is regular
D. A given grammar is not regular

ugcnetcse-nov2017-paper3 theory-of-computation pumping-lemma

Answer key

## 39.18 Pushdown Automata (5) top

### 39.18.1 Pushdown Automata: UGC NET CSE | December 2014 | Part 3 | Question: 22 top

The pushdown automation $M = (\{q_0, q_1, q_2\}, \{a, b\}, \{0, 1\}, \delta, q_0, 0, \{q_0\})$ with

$\delta(q_0, a, 0) = \{(q_1, 10)\}$
$\delta(q_1, a, 1) = \{(q_1, 11)\}$
$\delta(q_1, b, 1) = \{(q_2, \lambda)\}$
$\delta(q_2, b, 1) = \{(q_2, \lambda)\}$
$\delta(q_2, \lambda, 0) = \{(q_0, \lambda)\}$

Accepts the language

A. $L = \{a^n b^m | n, m \geq 0\}$
B. $L = \{a^n b^n | n \geq 0\}$
C. $L = \{a^n b^m | n, m > 0\}$
D. $L = \{a^n b^n | n > 0\}$

ugcnetcse-dec2014-paper3 theory-of-computation pushdown-automata

Answer key

### 39.18.2 Pushdown Automata: UGC NET CSE | July 2018 | Part 2 | Question: 33 top

A pushdown automata behaves like a Turing machine when the number of auxiliary memory is

A. 0 B. 1 C. 1 or more D. 2 or more

ugcnetcse-july2018-paper2 theory-of-computation pushdown-automata

Answer key

### 39.18.3 Pushdown Automata: UGC NET CSE | July 2018 | Part 2 | Question: 34 top

Pushdown automata can recognize language generated by _____

A. Only context free grammar
B. Only regular grammar
C. Context free grammar or regular grammar
D. Only context sensitive grammar

ugcnetcse-july2018-paper2 theory-of-computation pushdown-automata

Answer key

### 39.18.4 Pushdown Automata: UGC NET CSE | June 2013 | Part 3 | Question: 37 top

A pushdown automation $M = (Q, \Sigma, \Gamma, \delta, q_0, z, F)$ is set to be deterministic subject to which of the following condition(s), for every $q \in Q, a \in \Sigma \cup \{\lambda\}$ and $b \in \Gamma$

(s1) $\delta(q, a, b)$ contains at most one element

(s2) if $\delta(q, \lambda, b)$ is not empty then $\delta(q, c, b)$ must be empty for every $c \in \Sigma$

A. only s1 B. only s2 C. both s1 and s2 D. neither s1 nor s2

ugcnetcse-june2013-paper3 theory-of-computation pushdown-automata

Answer key

### 39.18.5 Pushdown Automata: UGC NET CSE | September 2013 | Part 3 | Question: 22 top

Non-deterministic pushdown automaton that accepts the language generated by the grammar: $S \rightarrow aSS \mid ab$ is

A. $\delta(q_0, \lambda, z) = \{(q_1, z)\}; \delta(q_0, a, S) = \{(q_1, SS)\}, (q_1, B)\} \delta(q_0, b, B) = \{(q_1, \lambda)\}, \delta(q_1, \lambda, z) = \{(q_f, \lambda)\}$
B. $\delta(q_0, \lambda, z) = \{(q_1, Sz)\}; \delta(q_0, a, S) = \{(q_1, SS)\}, (q_1, B)\} \delta(q_0, b, B) = \{(q_1, \lambda)\}, \delta(q_1, \lambda, z) = \{(q_f, \lambda)\}$
C. $\delta(q_0, \lambda, z) = \{(q_1, Sz)\}; \delta(q_0, a, S) = \{(q_1, S)\}, (q_1, B)\} \delta(q_0, b, \lambda) = \{(q_1, B)\}, \delta(q_1, \lambda, z) = \{(q_f, \lambda)\}$
D. $\delta(q_0, \lambda, z) = \{(q_1, z)\}; \delta(q_0, a, S) = \{(q_1, SS)\}, (q_1, B)\} \delta(q_0, b, \lambda) = \{(q_1, B)\}, \delta(q_1, \lambda, z) = \{(q_f, \lambda)\}$

ugcnetcse-sep2013-paper3 theory-of-computation pushdown-automata

## 39.19 Recursive And Recursively Enumerable Languages (3) top

### 39.19.1 Recursive And Recursively Enumerable Languages: UGC NET CSE | January 2017 | Part 3 | Question: 63 top

Which of the following statements is false?

A. Every context-sensitive language is recursive
B. The set of all languages that are not recursively enumerable is countable
C. The family of recursively enumerable language is closed under union
D. The families of recursively enumerable and recursive languages are closed under reversal

ugcnetcse-jan2017-paper3 theory-of-computation recursive-and-recursively-enumerable-languages

Answer key

### 39.19.2 Recursive And Recursively Enumerable Languages: UGC NET CSE | Junet 2015 | Part 3 | Question: 62 top

Given the following two statements:

$S_1$: If $L_1$ and $L_2$ are recursively enumerable languages over $\Sigma^*$, then $L_1 \cup L_2$ and $L_1 \cap L_2$ are also recursively enumerable.

$S_2$: The set of recursively enumerable languages is countable.

Which of the following is true?

A. $S_1$ is correct and $S_2$ is not correct
B. $S_1$ is not correct and $S_2$ is correct
C. Both $S_1$ and $S_2$ are not correct
D. Both $S_1$ and $S_2$ are correct

ugcnetcse-june2015-paper3 theory-of-computation recursive-and-recursively-enumerable-languages

Answer key

### 39.19.3 Recursive And Recursively Enumerable Languages: UGC NET CSE | October 2020 | Part 2 | Question: 27 top

Consider $L = L_1 \cap L_2$ where

$L_1 = \{0^m 1^m 2 0^n 1^n \mid m, n \geq 0\}$

$L_2 = \{0^m 1^n 2^k \mid m, n, k \geq 0\}$

Then, the language $L$ is

A. Recursively enumerable but not context free
B. Regular
C. Context free but not regular
D. Not recursive

ugcnetcse-oct2020-paper2 theory-of-computation recursive-and-recursively-enumerable-languages

Answer key

## 39.20 Regular Expression (17) top

### 39.20.1 Regular Expression: UGC NET CSE | August 2016 | Part 2 | Question: 31 top

The number of strings of length 4 that are generated by the regular expression $(0 + 1 + |2 + 3+)$*, where | is an alternation character and $+$,* are quantification characters, is :

A. $08$
B. $09$
C. $10$
D. $12$

ugcnetcse-aug2016-paper2 theory-of-computation regular-expression

Answer key

### 39.20.2 Regular Expression: UGC NET CSE | August 2016 | Part 3 | Question: 24 top

Consider the following identities for regular expressions :

(a) (r + s)* = (s + r)*

(b) (r*)* = r*

(c) (r* s*)* = (r + s)*

Which of the above identities are true ?

A. (a) and (b) only
B. (b) and (c) only
C. (c) and (a) only
D. (a), (b) and (c)

ugcnetcse-aug2016-paper3 theory-of-computation regular-expression

Answer key

### 39.20.3 Regular Expression: UGC NET CSE | December 2014 | Part 3 | Question: 24 top

Regular expression for the complement of language $L = \{a^n b^m \mid n \geq 4, m \leq 3\}$ is

A. $(a+b)^* ba (a+b)^*$
B. $a^* bbbbb^*$
C. $(\lambda + a + aa + aaa) b^* + (a+b)^* ba (a+b)^*$
D. None of the above

ugcnetcse-dec2014-paper3 theory-of-computation regular-expression regular-language

Answer key

### 39.20.4 Regular Expression: UGC NET CSE | January 2017 | Part 2 | Question: 31 top

Which of the following strings would match the regular expression : $p + [3 - 5] * [xyz]$?

I. $p443y$

II. $p6y$
III. $3xyz$
IV. $p35z$
V. $p353535x$
VI. $ppp5$

A. I, III and VI only
B. IV, V and VI only
C. II, IV and V only
D. I, IV and V only

ugcnetjan2017ii regular-expression theory-of-computation

Answer key

## 39.20.5 Regular Expression: UGC NET CSE | June 2010 | Part 2 | Question: 3 top

"My Laughter Machine (MLM) recognizes the following strings :

(i) $a$

(ii) $aba$

(iii) $abaabaaba$

(iv) $abaabaabaabaabaabaabaabaaba$

Using this as an information, how would you compare the following regular expressions ?

(i) $(aba)^{3x}$

(ii) $a.(baa)3^{x}-1.ba$

(iii) $ab.(aab).^{3x-1}.a$

A. $(ii)$ and $(iii)$ are same, $(i)$ is different.
B. $(ii)$ and $(iii)$ are not same.
C. $(i), (ii)$ and $(iii)$ are different.
D. $(i), (ii)$ and $(iii)$ are same.

ugcnetcse-june2010-paper2 theory-of-computation regular-expression

Answer key

## 39.20.6 Regular Expression: UGC NET CSE | June 2012 | Part 3 | Question: 35 top

Consider the regular expression (a+b)(a+b) ..... (a+b) (n-times). The minimum number of states in finite automaton that recognizes the language represented by this regular expression contains

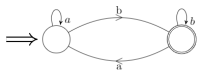
A. n states
B. n+1 states
C. n+2 states
D. $2^n$ states

ugcnetcse-june2012-paper3 theory-of-computation regular-expression

Answer key

## 39.20.7 Regular Expression: UGC NET CSE | June 2012 | Part 3 | Question: 43 top

The regular expression for the following DFA




A. ab*(b+aa*b)*
B. a*b(b+aa*b)*
C. a*b(b*+aa*b)
D. a*b(b+aa*b)*

ugcnetcse-june2012-paper3 theory-of-computation regular-expression

Answer key

## 39.20.8 Regular Expression: UGC NET CSE | June 2016 | Part 2 | Question: 31 top

The number of strings of length 4 that are generated by the regular expression

$$(0 \mid \epsilon)1^{+}2^{*}(3 \mid \epsilon)$$

, where $\mid$ is an alternation character, $\{+, *\}$ are quantification characters, and $\epsilon$ is the null string, is:

A. 08
B. 10
C. 11
D. 12

ugcnetcse-june2016-paper2 theory-of-computation regular-expression

Answer key

## 39.20.9 Regular Expression: UGC NET CSE | June 2016 | Part 3 | Question: 23 top

The regular expression for the complement of the language $L = \{a^n b^m \mid n \geq 4, m \leq 3\}$ is:

A. $(\lambda + a + aa + aaa)b^* + a^*bbbb^* + (a+b)^*ba(a+b)^*$
B. $(\lambda + a + aa + aaa)b^* + a^*bbbbb^* + (a+b)^*ab(a+b)^*$
C. $(\lambda + a + aa + aaa) + a^*bbbbb^* + (a+b)^*ab(a+b)^*$
D. $(\lambda + a + aa + aaa)b^* + a^*bbbbb^* + (a+b)^*ba(a+b)^*$

ugcnetcse-june2016-paper3 theory-of-computation regular-expression

Answer key

## 39.20.10 Regular Expression: UGC NET CSE | June 2016 | Part 3 | Question: 24 top

Consider the following two languages:

$L_1 = \{0^i 1^j \mid ged(i,j) = 1\}$

$L_2$ is any subset of 0*

Which of the following is correct?

A. $L_1$ is regular and $L_2*$ is not regular
B. $L_1$ is not regular and $L_2*$ is regular
C. Both $L_1$ and $L_2*$ are regular languages
D. Both $L_1$ and $L_2*$ are not regular languages

ugcnetcse-june2016-paper3 regular-language regular-expression

Answer key

## 39.20.11 Regular Expression: UGC NET CSE | June 2016 | Part 3 | Question: 55 top

Let L be the language generated by regular expression 0*10* and accepted by the deterministic finite automata M. Consider the relation $R_M$ defined by M as all states that are reachable from the start state. $R_M$ has ___ equivalence classes.

A. 2
B. 4
C. 5
D. 6

ugcnetcse-june2016-paper3 theory-of-computation regular-expression regular-language

Answer key

## 39.20.12 Regular Expression: UGC NET CSE | Junet 2015 | Part 3 | Question: 20 top

The regular expression corresponding to the language L where $L = \{x \in \{0,1\}^* \mid x \text{ ends with } 1 \text{ and does not contain substring } 00$ is

A. (1+01)* (10+01)
B. (1+01)* 01
C. (1+01)* (1+01)
D. (10+01)* 01

ugcnetcse-june2015-paper3 theory-of-computation regular-expression

Answer key

## 39.20.13 Regular Expression: UGC NET CSE | November 2017 | Part 2 | Question: 33 top

Which of the following regular expressions, each describing a language of binary numbers (MSB to LSB) that represents non-negative decimal values, does **not** include even values?

A. $0^*1^+0^*1^*$
B. $0^*1^*0^+1^*$
C. $0^*1^*0^*1^+$
D. $0^+1^*0^*1^*$

Where $\{+, *\}$ are quantification characters.

ugcnetcse-nov2017-paper2 regular-expression regular-language

Answer key

### 39.20.14 Regular Expression: UGC NET CSE | October 2020 | Part 2 | Question: 28 top

Let $L_1$ and $L_2$ be languages over $\Sigma = \{a, b\}$ represented by the regular expressions $(a^* + b)^*$ and $(a + b)^*$ respectively.

Which of the following is true with respect to the two languages?

A. $L_1 \subset L_2$
B. $L_2 \subset L_1$
C. $L_1 = L_2$
D. $L_1 \cap L_2 = \phi$

ugcnetcse-oct2020-paper2 theory-of-computation regular-expression

Answer key

### 39.20.15 Regular Expression: UGC NET CSE | October 2020 | Part 2 | Question: 79 top

Consider the following regular expressions:

a. $r = a(b + a)^*$
b. $s = a(a + b)^*$
c. $t = aa^*b$

Choose the correct answer from the options given below based on the relation between the languages generated by the regular expressions above:

A. $L(r) \subseteq L(s) \subseteq L(t)$
B. $L(r) \supseteq L(s) \supseteq L(t)$
C. $L(r) \supseteq L(t) \supseteq L(s)$
D. $L(s) \supseteq L(t) \supseteq L(r)$

ugcnetcse-oct2020-paper2 theory-of-computation regular-expression

Answer key

### 39.20.16 Regular Expression: UGC NET CSE | September 2013 | Part 2 | Question: 14 top

Regular expression for the language $L = w \in \{0, 1\}* \mid w$ has no pair of consecutive zeros $\}$ is

A. $(1 + 010)*$
B. $(01 + 10)*$
C. $(1 + 010) * (0 + \lambda)$
D. $(1 + 01) * (0 + \lambda)$

ugcnetsep2013ii theory-of-computation regular-expression

Answer key

### 39.20.17 Regular Expression: UGC NET CSE | September 2013 | Part 2 | Question: 15 top

Consider the following two languages:

$L_1 = \{a^n b^l a^k \mid n + l + k > 5\}$

$L_2 = \{a^n b^l a^k \mid n > 5, l > 3, k \leq l\}$

Which one of the following is true?

A. $L_1$ is regular language and $L_2$ is not regular language
B. Both $L_1$ and $L_2$ are regular language
C. Both $L_1$ and $L_2$ are not regular language
D. $L_1$ is not regular language and $L_2$ is regular language

ugcnetsep2013ii theory-of-computation regular-expression regular-language

Answer key

## 39.21 Regular Grammar (4) top

### 39.21.1 Regular Grammar: Doubt UGC NET top

https://gateoverflow.in/13365/ugcnet-dec2014-iii-24

i've a small doubt in the solution of this question

how is (a+b)*ba(a+b)* complement of the given language?

regular-language regular-grammar

Answer key

## 39.21.2 Regular Grammar: UGC NET CSE | August 2016 | Part 3 | Question: 22 top

The regular grammar for the language $L$ = {$a^n b^m$ | $n+m$ is even} is given by

(1) $S \to S_1 | S_2$

$S_1 \to aS_1 | A_1$

$A_1 \to bA_1 | \lambda$

$S_2 \to aaS_2 | A_2$

$A_2 \to bA_2 | \lambda$

(2) $S \to S_1 | S_2$

$S_1 \to aS_1 | aA_1$

$S_2 \to aaS_2 | A_2$

$A_1 \to bA_1 | \lambda$

$A_2 \to bA_2 | \lambda$

(3) $S \to S_1 | S_2$

$S_1 \to aaaS_1 | aA_1$

$S_2 \to aaS_2 | A_2$

$A_1 \to bA_1 | \lambda$

$A_2 \to bA_2 | \lambda$

(4) $S \to S_1 | S_2$

$S_1 \to aaS_1 | A_1$

$S_2 \to aaS_2 | aA_2$

$A_1 \to bbA_1 | \lambda$

$A_2 \to bbA_2 | b$

ugcnetcse-aug2016-paper3 theory-of-computation regular-grammar

Answer key

## 39.21.3 Regular Grammar: UGC NET CSE | June 2014 | Part 2 | Question: 10 top

The regular grammar for the language L= { $w$ | $n_a$(w) and $n_b(w)$ are both even, $w \in \{a,b\}^*$ } is given by : (Assume, $p, q, r$ and $s$ are states)

A. $p \to aq \mid br \mid \lambda, q \to bs \mid apr \to as \mid bp, s \to ar \mid bq$, $p$ and $s$ are initial and final states.
B. $p \to aq \mid br, q \to bs \mid apr \to as \mid bp, s \to ar \mid bq$, $p$ and $s$ are initial and final states.
C. $p \to aq \mid br \mid \lambda, q \to bs \mid apr \to as \mid bp, s \to ar \mid bq$ $p$ is both initial and final states.
D. $p \to aq \mid br, q \to bs \mid apr \to as \mid bp, s \to ar \mid bq$ $p$ is both initial and final states.

ugcnetcse-june2014-paper2 theory-of-computation regular-grammar

Answer key

### 39.21.4 Regular Grammar: UGC NET CSE | September 2013 | Part 3 | Question: 17 top

A regular grammar for the language $L = \{a^n b^m \mid \text{ n is even and m is even }\}$ is given by

A. $S \rightarrow aSb \mid S_1; S_1 \rightarrow bS_1a \mid \lambda$
B. $S \rightarrow aaS \mid S_1; S_1 \rightarrow bSb \mid \lambda$
C. $S \rightarrow aSb \mid S_1; S_1 \rightarrow S_1ab \mid \lambda$
D. $S \rightarrow aaS \mid S_1; S_1 \rightarrow bbS_1 \mid \lambda$

ugcnetcse-sep2013-paper3 theory-of-computation regular-grammar

Answer key

## 39.22 Regular Language (10) top

### 39.22.1 Regular Language: UGC NET CSE | August 2016 | Part 3 | Question: 55 top

Given the following two languages :

$L_1 = uww^R\nu | u, v, w \in (a, b)^+$

$L_2 = uww^R\nu | u, \nu, w \in (a, b)^+, |u| \geq |\nu|$

Which of the following is correct ?

A. $L_1$ is regular language and $L_2$ is not regular language.
B. $L_1$ is not regular language and $L_2$ is regular language.
C. Both $L_1$ and $L_2$ are regular languages.
D. Both $L_1$ and $L_2$ are not regular languages.

ugcnetcse-aug2016-paper3 theory-of-computation regular-language

Answer key

### 39.22.2 Regular Language: UGC NET CSE | December 2013 | Part 2 | Question: 28 top

Given the following statements:

$S_1$: If $L$ is a regular language then the language $\{uv \mid u \in L, v \in L^R\}$ is also regular.

$S_2$: $L = \{ww^R\}$ is regular language.

Which of the following is true?

A. $S_1$ is not correct and $S_2$ is not correct
B. $S_1$ is not correct and $S_2$ is correct
C. $S_1$ is correct and $S_2$ is not correct
D. $S_1$ is correct and $S_2$ is correct

ugcnetcse-dec2013-paper2 theory-of-computation regular-language

Answer key

### 39.22.3 Regular Language: UGC NET CSE | December 2014 | Part 3 | Question: 23 top

Given two languages :

$L_1 = \left\{(ab)^n a^k | n > k, k \geq 0\right\}$

$L_2 = \{a^n b^m | n \neq m\}$

Using pumping lemma for regular language, it can be shown that

A. $L_1$ is regular and $L_2$ is not regular.
B. $L_1$ is not regular and $L_2$ is regular.
C. $L_1$ is regular and $L_2$ is regular.
D. $L_1$ is not regular and $L_2$ is not regular.

ugcnetcse-dec2014-paper3 theory-of-computation regular-language

Answer key

## 39.22.4 Regular Language: UGC NET CSE | January 2017 | Part 3 | Question: 19 top

Which of the following are not regular?

a. Strings of even number of a's
b. Strings of a's , whose length is a prime number.
c. Set of all palindromes made up of a's and b's.
d. Strings of a's whose length is a perfect square.

A. (a) and (b) only
B. (a), (b) and (c) only
C. (b),(c) and (d) only
D. (b) and (d) only

ugcnetcse-jan2017-paper3 theory-of-computation regular-language

Answer key

## 39.22.5 Regular Language: UGC NET CSE | January 2017 | Part 3 | Question: 20 top

Consider the languages $L_1 = \phi$ and $L_2 = \{1\}$. Which one of the following represents $L_1^* \cup L_2^* L_1^*$?

A. $\{\in\}$
B. $\{\in, 1\}$
C. $\phi$
D. $1^*$

ugcnetcse-jan2017-paper3 theory-of-computation regular-language

Answer key

## 39.22.6 Regular Language: UGC NET CSE | January 2017 | Part 3 | Question: 21 top

Given the following statements:

a. A class of languages that is closed under union and complementation has to be closed under intersection
b. A class of languages that is closed under union and intersection has to be closed under complementation

Which of the following options is correct?

A. Both (a) and (b) are false
B. Both (a) and (b) are true
C. (a) is true, (b) is false
D. (a) is false, (b) is true

ugcnetcse-jan2017-paper3 theory-of-computation regular-language

Answer key

## 39.22.7 Regular Language: UGC NET CSE | June 2014 | Part 3 | Question: 15 top

Let $L$ be any language. Define $\text{Even}(W)$ as the strings obtained by extracting from $W$ the letters in the even-numbered positions and $\text{Even}(L) = \{\text{Even}(W) \mid W \in L\}$. We define another language $\text{Chop}(L)$ by removing the two leftmost symbols of every string in $L$ given by $\text{Chop}(L) = \{W \mid vW \in L, \text{ with } |v| = 2\}$. If $L$ is regular language then

A. $\text{Even(L)}$ is regular and $\text{Chop(L)}$ is not regular
B. Both $\text{Even(L)}$ and $\text{Chop(L)}$ are regular
C. $\text{Even(L)}$ is not regular and $\text{Chop(L)}$ is regular
D. Both $\text{Even(L)}$ and $\text{Chop(L)}$ are not regular

ugcnetjune2014iii theory-of-computation regular-language

Answer key

## 39.22.8 Regular Language: UGC NET CSE | June 2016 | Part 3 | Question: 22 top

The symmetric differences of two sets $S_1$ and $S_2$ is defined as:

$$S_1 \oplus S_2 = \{x \mid x \in S_1 \text{ or } x \in S_2, \text{ but x is not in both } S_1 \text{ and } S_2\}$$

The nor of two languages is defined as

$$nor(L_1, L_2) = \{w \mid w \notin L_1 \text{ and } w \notin L_2\}$$

Which of the following is correct?

A. The family of regular languages is closed under symmetric difference but not closed under nor
B. The family of regular languages is closed under nor but not closed under symmetric difference
C. The family of regular languages are closed under both symmetric difference and nor
D. The family of regular languages are not closed under both symmetric difference and nor

ugcnetcse-june2016-paper3 theory-of-computation regular-language

Answer key

### 39.22.9 Regular Language: UGC NET CSE | October 2020 | Part 2 | Question: 56 top

Consider the following languages:

$L_1 = \{a^{\grave{z}^z} \mid \grave{Z} \text{ is an integer}\}$

$L_2 = \{a^{z\grave{z}} \mid \grave{Z} \geq 0\}$

$L_3 = \{\omega\omega \mid \omega\epsilon\{a,b\}^*\}$

Which of the languages is(are) regular?

Choose the correct answer from the options given below:

A. $L_1$ and $L_2$ only B. $L_1$ and $L_3$ only C. $L_1$ only D. $L_2$ only

ugcnetcse-oct2020-paper2 theory-of-computation regular-language

Answer key

### 39.22.10 Regular Language: UGC NET CSE | September 2013 | Part 3 | Question: 16 top

Assume, $L$ is regular language. Let statements $S_1$ and $S_2$ be defined as:

$S_1 : SQRT(L) = \{x \mid \text{ for some y with } \mid y \mid = \mid x^2 \mid, xy \in L\}$ is regular.

$S_2 : LOG(L) = \{x \mid \text{ for some y with } \mid y \mid = 2^{|x|}, xy \in L\}$ is regular.

Which of the following is true?

A. $S_1$ is correct and $S_2$ is not correct
B. Both $S_1$ and $S_2$ are correct
C. Both $S_1$ and $S_2$ are not correct
D. $S_1$ is not correct and $S_2$ is correct

ugcnetcse-sep2013-paper3 theory-of-computation regular-language

Answer key

## 39.23 Right Quotient (1) top

### 39.23.1 Right Quotient: UGC NET CSE | June 2013 | Part 2 | Question: 20 top

Given L1=L(a*baa*) L2=L(ab*). The regular expression corresponding to language L3=L1/L2 (right quotient) is given by

A. a*b B. a*baa* C. a*ba* D. None of the above

ugcnetcse-june2013-paper2 theory-of-computation right-quotient

Answer key

## 39.24 Strings (1) top

### 39.24.1 Strings: UGC NET CSE | June 2019 | Part 2 | Question: 78 top

Consider the following grammar:

$S \rightarrow XY$

$X \rightarrow YaY \mid a \text{ and } Y \rightarrow bbX$

Which of the following statements is/are true about the above grammar?

a. Strings produced by the grammar have odd number of $a$'s in m
b. Every string produced by the grammar have even number of $b$'s in m
c. Every string produced by the grammar have odd number of $b$'s in m
d. Strings produced by the grammar have even number of $a$'s in m

A. a only B. b and c only C. d only D. c and d only

ugcnetcse-june2019-paper2 grammar strings

Answer key

## 39.25 Turing Machine (5) top

### 39.25.1 Turing Machine: UGC NET CSE | August 2016 | Part 3 | Question: 56 top

Given a Turing Machine

$M = (q_0, q_1, 0, 1, 0, 1, B, \delta, B, q_1)$

Where δ is a transition function defined as

$\delta(q_0, 0) = (q_0, 0, R)$

$\delta(q_0, B) = (q_1, B, R)$

The language $L(M)$ accepted by Turing machine is given as :

A. $0^*1^*$ B. $00^*$ C. $10^*$ D. $1^*0^*$

ugcnetcse-aug2016-paper3 theory-of-computation turing-machine

Answer key

## 39.25.2 Turing Machine: UGC NET CSE | January 2017 | Part 3 | Question: 62 top

Which of the following pairs have different expressive power?

A. Single-tape-turing machine and multi-dimensional turing machine
B. Multi-tape-turing machine and multi-dimensional turing machine
C. Deterministic push down automata and non-deterministic push down automata
D. Deterministic finite automata and non-deterministic finite automata

ugcnetcse-jan2017-paper3 theory-of-computation turing-machine

Answer key

## 39.25.3 Turing Machine: UGC NET CSE | July 2018 | Part 2 | Question: 40 top

Consider the following statements( ):

$S_1$: There exist no algorithm for deciding if any two Turing machine $M_1$ and $M_2$ accept the same language

$S_2$: The problem of determining whether a Turing machine halts on any input is undecidable

Which one of the following options is correct?

A. Both $S_1$ and $S_2$ are correct
B. Both $S_1$ and $S_2$ are not correct
C. Only $S_1$ is correct
D. Only $S_2$ is correct

ugcnetcse-july2018-paper2 theory-of-computation turing-machine

Answer key

## 39.25.4 Turing Machine: UGC NET CSE | June 2016 | Part 3 | Question: 57 top

Given a Turing Machine

$M = (\{q_0, q_1, q_2, q_3\}, \{a, b\}, \{a, b, B\}, \delta, B, \{q_3\})$

where $\delta$ is a atransaction function defined as

$\delta(q_0, a) = (q_1, a, R)$

$\delta(q_1, b) = (q_2, b, R)$

$\delta(q_2, a) = (q_2, a, R)$

$\delta(q_2, b) = (q_3, b, R)$

The language L(M) accepted by the Turing machine is given as:

A. aa*b B. abab C. aba*b D. aba*

ugcnetcse-june2016-paper3 theory-of-computation turing-machine

Answer key

## 39.25.5 Turing Machine: UGC NET CSE | June 2019 | Part 2 | Question: 80 top

For a statement

A language $L \subseteq \Sigma^*$ is recursive if there exists some turing machine $M$. Which of the following conditions is satisfied for any string $\omega$?

A. If $\omega \in L$, then $M$ accepts $\omega$ and $M$ will not halt
B. If $\omega \notin L$, then $M$ accepts $\omega$ and $M$ will halt by reaching at final state
C. If $\omega \notin L$, then $M$ halts without reaching to acceptable state
D. If $\omega \in L$, then $M$ halts without reaching to an acceptable state

ugcnetcse-june2019-paper2 turing-machine

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 39.0.1 | B | 39.0.2 | B | 39.0.3 | C | 39.0.4 | D | 39.0.5 | B |
| 39.0.6 | Q-Q | 39.0.7 | Q-Q | 39.0.8 | Q-Q | 39.0.9 | A | 39.0.10 | B |
| 39.0.11 | C | 39.0.12 | A | 39.0.13 | Q-Q | 39.0.14 | A | 39.0.15 | C |
| 39.0.16 | B | 39.0.17 | B | 39.0.18 | B | 39.0.19 | C | 39.0.20 | A |
| 39.0.21 | Q-Q | 39.0.22 | A | 39.0.23 | B | 39.0.24 | Q-Q | 39.0.25 | C |
| 39.0.26 | B | 39.1.1 | B | 39.1.2 | B | 39.2.1 | Q-Q | 39.3.1 | Q-Q |
| 39.4.1 | Q-Q | 39.4.2 | Q-Q | 39.4.3 | D | 39.4.4 | X | 39.4.5 | D |
| 39.4.6 | C | 39.4.7 | D | 39.4.8 | C | 39.5.1 | Q-Q | 39.5.2 | Q-Q |
| 39.5.3 | C | 39.5.4 | C | 39.5.5 | D | 39.5.6 | C | 39.5.7 | C |
| 39.5.8 | A | 39.6.1 | B | 39.6.2 | Q-Q | 39.7.1 | Q-Q | 39.7.2 | C |
| 39.7.3 | D | 39.7.4 | D | 39.7.5 | A | 39.8.1 | B | 39.9.1 | D |
| 39.9.2 | C | 39.9.3 | Q-Q | 39.9.4 | Q-Q | 39.9.5 | Q-Q | 39.9.6 | B |
| 39.9.7 | D | 39.9.8 | D | 39.9.9 | C | 39.9.10 | C | 39.10.1 | Q-Q |
| 39.10.2 | B | 39.10.3 | B | 39.10.4 | Q-Q | 39.10.5 | Q-Q | 39.10.6 | D |
| 39.10.7 | D | 39.10.8 | D | 39.10.9 | C | 39.10.10 | A | 39.10.11 | D |
| 39.10.12 | D | 39.10.13 | C | 39.10.14 | A | 39.10.15 | B | 39.11.1 | X |
| 39.11.2 | Q-Q | 39.11.3 | B | 39.11.4 | D | 39.11.5 | C | 39.11.6 | B |
| 39.11.7 | A | 39.11.8 | B | 39.12.1 | C | 39.13.1 | B | 39.14.1 | D |
| 39.15.1 | C | 39.16.1 | B | 39.17.1 | B | 39.17.2 | D | 39.17.3 | D |
| 39.18.1 | B | 39.18.2 | Q-Q | 39.18.3 | Q-Q | 39.18.4 | C | 39.18.5 | B |
| 39.19.1 | B | 39.19.2 | D | 39.19.3 | C | 39.20.1 | Q-Q | 39.20.2 | Q-Q |
| 39.20.3 | D | 39.20.4 | D | 39.20.5 | Q-Q | 39.20.6 | B | 39.20.7 | D |
| 39.20.8 | D | 39.20.9 | D | 39.20.10 | B | 39.20.11 | D | 39.20.12 | C |
| 39.20.13 | C | 39.20.14 | C | 39.20.15 | B | 39.20.16 | D | 39.20.17 | A |
| 39.21.1 | Q-Q | 39.21.2 | Q-Q | 39.21.3 | C | 39.21.4 | D | 39.22.1 | Q-Q |
| 39.22.2 | C | 39.22.3 | D | 39.22.4 | C | 39.22.5 | D | 39.22.6 | C |
| 39.22.7 | B | 39.22.8 | C | 39.22.9 | X | 39.22.10 | B | 39.23.1 | C |
| 39.24.1 | D | 39.25.1 | Q-Q | 39.25.2 | C | 39.25.3 | Q-Q | 39.25.4 | C |
| 39.25.5 | C | | | | | | | | |

### 40.0.1 UGC NET CSE | October 2020 | Part 2 | Question: 62 top

Which of the following statements are true?

a. A sentence $\alpha$ entails a sentence $\beta$ if $\beta$ is true in all models in which $\alpha$ is true.

b. Forward chaining is a data driven method of reasoning in a knowledge base.

c. Propositional logic uses more than two truth values.

d. Propositional logic is a declarative language.

Choose the correct answer from the options given below:

A. $(a)$ and $(b)$ only B. $(b)$ and $(c)$ only C. $(c)$ and $(d)$ only D. $(b)$ and $(d)$ only

ugcnetcse-oct2020-paper2

Answer key

### 40.0.2 UGC NET CSE | November 2017 | Part 2 | Question: 15 top

Which of the following is **not** correct (in C++)?

A. Class templates and function templates are instantiated in the same way
B. Class templates differ from function templates in the way they are initiated
C. Class template is initiated by defining an object using the template argument
D. Class templates are generally used for storage classes

ugcnetcse-nov2017-paper2

Answer key

### 40.0.3 UGC NET CSE | November 2017 | Part 2 | Question: 9 top

Negation of the proposition $\exists\, x\, H(x)$ is

A. $\exists\, x \neg H(x)$
B. $\forall\, x \neg H(x)$
C. $\forall\, x\, H(x)$
D. $\neg\, x\, H(x)$

ugcnetcse-nov2017-paper2

Answer key

### 40.0.4 UGC NET CSE | November 2017 | Part 2 | Question: 6 top

The Boolean function with the Karnaugh map

| CD \ AB | 00 | 01 | 11 | 10 |
|---|---|---|---|---|
| 00 | 0 | 1 | 1 | 0 |
| 01 | 0 | 1 | 1 | 1 |
| 11 | 1 | 1 | 1 | 1 |
| 10 | 0 | 1 | 1 | 0 |

is

A. $(A+C)\cdot D+B$
B. $(A+B)\cdot C+D$
C. $(A+D)\cdot C+B$
D. $(A+C)\cdot B+D$

ugcnetcse-nov2017-paper2

### 40.0.5 UGC NET CSE | November 2017 | Part 2 | Question: 11 top

$\text{prtdata}$ is a pointer to a data type. The expression $^*\text{prtdata}++$ is evaluated as (in C++)

A. $^*(\text{prtdata}++)$
B. $(^*\text{prtdata})++$
C. $^*(\text{prtdata})++$
D. Depends on compiler

ugcnetcse-nov2017-paper2

Answer key

### 40.0.6 UGC NET CSE | November 2017 | Part 2 | Question: 12 top

The associativity of which of the following operators is Left to Right, in C++?

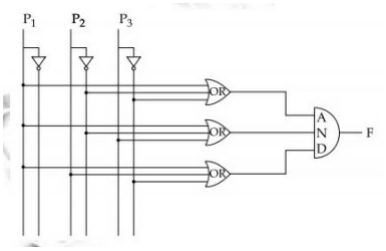
A. Unary Operator
B. Logical not
C. Array element access
D. addressof

ugcnetcse-nov2017-paper2

Answer key

### 40.0.7 UGC NET CSE | November 2017 | Part 2 | Question: 10 top

The output of the following combinational circuit is $F$.




The value of $F$ is

A. $P_1 + P_2' P_3$
B. $P_1 + P_2' P_3'$
C. $P_1 + P_2 P_3'$
D. $P_1' + P_2 P_3$

ugcnetcse-nov2017-paper2

Answer key

### 40.0.8 UGC NET CSE | November 2017 | Part 2 | Question: 14 top

Which of the following is **not** correct for virtual function in C++?

A. Must be declared in public section of class
B. Virtual function can be static
C. Virtual function should be accessed using pointers
D. Virtual function is defined in base class

ugcnetcse-nov2017-paper2

Answer key

### 40.0.9 UGC NET CSE | November 2017 | Part 2 | Question: 27 top

_____ do not take their decisions on measurements or estimates of the current traffic and topology.

A. Static algorithms
B. Adaptive algorithms
C. Non-Adaptive algorithms
D. Recursive algorithms.

ugcnetcse-nov2017-paper2

Answer key

### 40.0.10 UGC NET CSE | November 2017 | Part 2 | Question: 16 top

Which of the following is/are **true** with reference to 'view' in DBMS?

a. A 'view' is a special stored procedure executed when certain event occurs
b. A 'view' is a virtual table, which occurs after executing a pre-compiled query

A. Only (a) is true
B. Only (b) is true
C. Both (a) and (b) are true
D. Neither (a) nor (b) are true

ugcnetcse-nov2017-paper2

Answer key

### 40.0.11 UGC NET CSE | November 2017 | Part 2 | Question: 21 top

Consider an array representation of an $n$ element binary heap where the elements are stored from index $1$ to index $n$ of the array. For the element stored at index $i$ of the array $(i \leq n)$, the index of the parent is

A. $\text{floor}((i+1)/2)$
B. $\text{ceiling}((i+1)/2)$
C. $\text{floor}(i/2)$
D. $\text{ceiling}(i/2)$

ugcnetcse-nov2017-paper2

Answer key

## 40.0.12 UGC NET CSE | November 2017 | Part 2 | Question: 4 top

How many distinguishable permutations of the letters in the word of BANANA are there?

A. $720$ B. $120$ C. $60$ D. $360$

ugcnetcse-nov2017-paper2

Answer key

## 40.0.13 UGC NET CSE | November 2017 | Part 2 | Question: 19 top

In RDBMS, different classes of relations are created using _____ technique to prevent modification anomolies.

A. Functional Dependencies
B. Data integrity
C. Referential integrity
D. Normal Forms

ugcnetcse-nov2017-paper2

Answer key

## 40.0.14 UGC NET CSE | November 2017 | Part 2 | Question: 20 top

_____ SQL command changes one or more fields in a record

A. LOOK-UP B. INSERT C. MODIFY D. CHANGE

ugcnetcse-nov2017-paper2

Answer key

## 40.0.15 UGC NET CSE | November 2017 | Part 2 | Question: 18 top

Match the following with respect to RDBMS :

| | | | |
|---|---|---|---|
| (a) | Entity integrity | (i) | enforces some specific business rule that do not fall into entity or domain |
| (b) | Domain integrity | (ii) | Rows can't be deleted which are used by other records |
| (c) | Referential integrity | (iii) | enforces valid entries for a column |
| (d) | Userdefined integrity | (iv) | No duplicate rows in a table |

**Code :**

A. (a)-(iii); (b)-(iv); (c)-(i); (d)-(ii)
B. (a)-(iv); (b)-(iii); (c)-(ii); (d)-(i)
C. (a)-(iv); (b)-(ii); (c)-(iii); (d)-(i)
D. (a)-(ii); (b)-(iii); (c)-(iv); (d)-(i)

ugcnetcse-nov2017-paper2 databases

Answer key

## 40.0.16 UGC NET CSE | November 2017 | Part 2 | Question: 22 top

The following numbers are inserted into an empty binary search tree in the given order: $10, 1, 3, 5, 15, 12, 16$. What is the height of the binary search tree?

A. $3$ B. $4$ C. $5$ D. $6$

ugcnetcse-nov2017-paper2

Answer key

## 40.0.17 UGC NET CSE | November 2017 | Part 2 | Question: 25 top

Post-order traversal of a given binary search tree $T$ produces following sequence of keys: $3, 5, 7, 9, 4, 17, 16, 20, 18, 15, 14$. Which one of the following sequences of keys can be the result of an in-

order traversal of the tree $T$?

A. $3,4,5,7,9,14,20,18,17,16,15$
B. $20,18,17,16,15,14,3,4,5,7,9$
C. $20,18,17,16,15,14,9,7,5,4,3$
D. $3,4,5,7,9,14,15,16,17,18,20$

ugcnetcse-nov2017-paper2

Answer key

## 40.0.18 UGC NET CSE | November 2017 | Part 2 | Question: 26 top

Which of the following devices takes data sent from one network device and forwards it to the destination node based on MAC address?

A. Hub
B. Modem
C. Switch
D. Gateway

ugcnetcse-nov2017-paper2

Answer key

## 40.0.19 UGC NET CSE | November 2017 | Part 3 | Question: 34 top

Consider the following two sequences:

$X =< B, C, D, C, A, B, C >$ and $Y =< C, A, D, B, C, B >$

The length of longest common subsequence of $X$ and $Y$ is

A. $5$
B. $3$
C. $4$
D. $2$

ugcnetcse-nov2017-paper3

Answer key

## 40.0.20 UGC NET CSE | November 2017 | Part 3 | Question: 36 top

An undirected graph $G(V, E)$ contains $n(n > 2)$ nodes named $v_1, v_2, \ldots, v_n$. Two nodes $v_i$ and $v_j$ are connected if and only if $0 <| i - j |\leq 2$. Each edge $(v_i, v_j)$ is assigned a weight $i + j$. The cost of the minimum spanning tree of such a graph with $10$ nodes is

A. $88$
B. $91$
C. $49$
D. $21$

ugcnetcse-nov2017-paper3

Answer key

## 40.0.21 UGC NET CSE | November 2017 | Part 3 | Question: 73 top

Consider the following statements:

a. UNIX provides three types of permissions
b. UNIX provides three sets of permissions

- Read, Write, Execute
- permission for group
- permission for others

Which of the above statement/s is/are **true**?

A. Only (a)
B. Only (b)
C. Both (a) and (b)
D. Neither (a) nor (b)

ugcnetcse-nov2017-paper3

Answer key

## 40.0.22 UGC NET CSE | November 2017 | Part 2 | Question: 3 top

Let $A = \begin{bmatrix} 1 & 1 & 0 \\ 0 & 1 & 0 \\ 1 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 1 & 0 \\ 1 & 0 & 1 & 1 \end{bmatrix}$ Find the boolean product $A \odot B$ of the two matrices.

A.

$$\begin{bmatrix} 1 & 1 & 1 & 0 \\ 0 & 1 & 1 & 0 \\ 1 & 1 & 1 & 0 \\ 1 & 0 & 1 & 1 \end{bmatrix}$$

B.

$$\begin{bmatrix} 1 & 1 & 0 & 1 \\ 0 & 1 & 0 & 1 \\ 1 & 1 & 1 & 0 \\ 1 & 0 & 1 & 1 \end{bmatrix}$$

C.

$$\begin{bmatrix} 1 & 1 & 0 & 1 \\ 0 & 1 & 1 & 0 \\ 1 & 1 & 1 & 0 \\ 1 & 0 & 1 & 1 \end{bmatrix}$$

D. $$\begin{bmatrix} 1 & 1 & 1 & 0 \\ 0 & 1 & 1 & 0 \\ 1 & 0 & 1 & 1 \\ 1 & 0 & 1 & 1 \end{bmatrix}$$

ugcnetcse-nov2017-paper2

## 40.0.23 UGC NET CSE | November 2017 | Part 2 | Question: 2 top

Let $m = (313)_4$ and $n = (322)_4$. Find the base $4$ expansion of $m + n$.

A. $(635)_4$ B. $(32312)_4$ C. $(21323)_4$ D. $(1301)_4$

ugcnetcse-nov2017-paper2

Answer key

## 40.0.24 UGC NET CSE | November 2017 | Part 3 | Question: 65 top

Entropy of a discrete random variable with possible values $\{x_1, x_2, \ldots, x_n\}$ and probability density function $P(X)$ is

$$H(X) = -\sum_{i=1}^{n} P(x_i) \log_b P(x_i)$$

The value of $b$ gives the units of entropy. The unit for $b = 10$ is

A. bits B. bann C. nats D. deca

ugcnetcse-nov2017-paper3

## 40.0.25 UGC NET CSE | November 2017 | Part 2 | Question: 38 top

Suppose there are six files $F1, F2, F3, F4, F5, F6$ with corresponding sizes $150$ KB, $225$ KB, $75$ KB $60$ KB, $275$ KB and $65$ KB respectively. The files are to be stored on a sequential device in such a way that optimizes access time. In what order should the files be stored?

A. $F5, F2, F1, F3, F6, F4$
B. $F4, F6, F3, F1, F2, F5$
C. $F1, F2, F3, F4, F5, F6$
D. $F6, F5, F4, F3, F2, F1$

ugcnetcse-nov2017-paper2

Answer key

## 40.0.26 UGC NET CSE | October 2020 | Part 1 | Question: 33 top

A firewall is a software tool that protects

Choose the correct answer from the options given below:

a. Server b. Network c. Fire d. Individual computer

A. $a, c$ only B. $b, c$ only C. $a, b, c$ only D. $a, b, d$ only

ugcnetcse-oct2020-paper1

Answer key

## 40.0.27 UGC NET CSE | October 2020 | Part 1 | Question: 32 top

Cloud computing has the following distinct characteristics:

a. The service is hosted on the internet b. It is made available by a service provider c. Its cost is predictable d. The service is fully managed by the provider

Choose the correct answer from the options given below:

A. $a, b$ only B. $a, b, c$ only C. $a, d$ only D. $a, b, d$ only

ugcnetcse-oct2020-paper1

Answer key

## 40.0.28 UGC NET CSE | October 2020 | Part 1 | Question: 30 top

Which one of the following pramanas has been accepted in Buddhism?

A. Arthapatti B. Anupalabdhi C. S'abda D. Pratyaksha

ugcnetcse-oct2020-paper1

Answer key

## 40.0.29 UGC NET CSE | December 2018 | Part 2 | Question: 31 top

Let $r = a(a+b)^*,\ s = aa^*b$ and $t = a^*b$ be three regular expressions.
Consider the following :

i. $L(s) \subseteq L(r)$ and $L(s) \subseteq L(t)$
ii. $L(r) \subseteq L(s)$ and $L(s) \subseteq L(t)$

Choose the correct answer from the code given below :

A. Only i is correct
B. Only ii is correct
C. Both i and ii are correct
D. Neither i nor ii is correct

ugcnetcse-dec2018-paper2

Answer key

## 40.0.30 UGC NET CSE | November 2017 | Part 2 | Question: 36 top

In Distributed system, the capacity of a system to adapt the increased service load is called

A. Tolerance B. Scalability C. Capability D. Loading

ugcnetcse-nov2017-paper2

Answer key

## 40.0.31 UGC NET CSE | November 2017 | Part 2 | Question: 39 top

Which module gives control of the CPU to the process selected by the short-term schedular?

A. Dispatcher B. Interrupt C. Schedular D. Threading

ugcnetcse-nov2017-paper2 operating-system

Answer key

## 40.0.32 UGC NET CSE | November 2017 | Part 2 | Question: 41 top

Software does not wear-out in the traditional sense of the term, but software does tend to deteriorate as it

evolves, because

A. Software suffers from exposure to hostile environments
B. Defects are more likely to arise after software has been used often
C. Multiple change requests introduce errors in component interactions
D. Software spare parts become harder to order

ugcnetcse-nov2017-paper2

Answer key

## 40.0.33 UGC NET CSE | November 2017 | Part 2 | Question: 40 top

Two atomic operations permissible on Semaphores are _____ and _____.

A. wait, stop
B. wait, hold
C. hold, signal
D. wait, signal

ugcnetcse-nov2017-paper2

Answer key

## 40.0.34 UGC NET CSE | November 2017 | Part 2 | Question: 42 top

Software re-engineering is concerned with

A. Re-constructing the original source code from the existing machine (low-level) code program and modifying it ti make it more user-friendly
B. Scrapping the source code of a software and re-writing it entirely from scratch
C. Re-organising and modifying existing software systems to make them more maintainable
D. Translating source code of an existing software to a new machine (low-level) language

ugcnetcse-nov2017-paper2

Answer key

## 40.0.35 UGC NET CSE | November 2017 | Part 2 | Question: 43 top

Which of the following is **not** a key issue stressed by an agile philosophy of software engineering?

A. The importance of self-organizing teams as well as communication and collaboration between team members and customers
B. Recognition that change represents opportunity
C. Emphasis on rapid delivery of software that satisfies the customer
D. Having a separate testing phase after a build phase

ugcnetcse-nov2017-paper2

Answer key

## 40.0.36 UGC NET CSE | November 2017 | Part 2 | Question: 13 top

A member function can always access the data in, (in C++)

A. the class of which it is member
B. the object of which it is a member
C. the public part of its class
D. the private part of its class

ugcnetcse-nov2017-paper2

Answer key

## 40.0.37 UGC NET CSE | November 2017 | Part 2 | Question: 24 top

A list of n strings, each of length n, is sorted into lexicographic order using merge - sort algorithm. The worst case running time of this computation is:

A. $O(n \log n)$
B. $O(n^2 \log n)$
C. $O(n^2 + \log n)$
D. $O(n^3)$

ugcnetcse-nov2017-paper2

## 40.0.38 UGC NET CSE | November 2017 | Part 2 | Question: 44 top

What is the normal order of activities in which traditional software testing is organized?

a. Integration Testing
b. System Testing
c. Unit Testing
d. Validation Testing

A. (c), (a), (b), (d)
B. (c), (a), (d), (b)
C. (d), (c), (b), (a)
D. (b), (d), (a), (c)

ugcnetcse-nov2017-paper2

Answer key

## 40.0.39 UGC NET CSE | November 2017 | Part 2 | Question: 49 top

Which of the given wireless technologies used in IoT, consumes the least amount of power?

A. Zigbee
B. Bluetooth
C. Wi-Fi
D. GSM/CDMA

ugcnetcse-nov2017-paper2 computer-networks

Answer key

## 40.0.40 UGC NET CSE | November 2017 | Part 3 | Question: 16 top

Find the equation of the circle $x^2 + y^2 = 1$ in terms of $x'y'$ coordinates, assuming that the $xy$ coordinate system results from a scaling of $3$ units in the $x'$ direction and $4$ units in the $y'$ direction.

A. $3(x')^2 + 4(y')^2 = 1$

B. $\left(\frac{x'}{3}\right)^2 + \left(\frac{y'}{4}\right)^2 = 1$

C. $(3x')^2 + (4y')^2 = 1$

D. $\frac{1}{3}(x')^2 + \frac{1}{4}(y')^2 = 1$

ugcnetcse-nov2017-paper3

Answer key

## 40.0.41 UGC NET CSE | November 2017 | Part 3 | Question: 17 top

Find the normalization transformation that maps a window whose lower left corner is at $(1, 1)$ and upper right corner is at $(3, 5)$ onto a viewpoint that is the entire normalized device screen

A.
$$\begin{pmatrix} \frac{1}{2} & 0 & \frac{-1}{2} \\ 0 & \frac{1}{4} & \frac{-1}{4} \\ 0 & 0 & 1 \end{pmatrix}$$

B.
$$\begin{pmatrix} \frac{1}{2} & 0 & \frac{1}{2} \\ 0 & \frac{-1}{4} & \frac{1}{4} \\ 1 & 1 & 1 \end{pmatrix}$$

C.
$$\begin{pmatrix} \frac{1}{2} & 0 & \frac{-1}{2} \\ 0 & \frac{1}{4} & \frac{1}{4} \\ 1 & 0 & 0 \end{pmatrix}$$

D. $\begin{pmatrix} \frac{1}{2} & 0 & \frac{1}{2} \\ 0 & \frac{1}{4} & \frac{-1}{4} \\ 1 & 0 & 0 \end{pmatrix}$

ugcnetcse-nov2017-paper3

Answer key

## 40.0.42 UGC NET CSE | November 2017 | Part 3 | Question: 32 top

You are given a sequence of $n$ elements to sort. The input sequence consists of $\frac{n}{k}$ subsequences, each containing $k$ elements. The elements in a given subsequence are all smaller than the elements in the succeeding subsequence and larger than the elements in the preceding subsequence. Thus, all that is needed to sort the whole sequence of length $n$ is to sort the $k$ elements in each of the $\frac{n}{k}$ subsequences.

The lower bound on the number of comparisons needed to solve this variant of the sorting problem is

A. $\Omega(n)$

B. $\Omega\left(\frac{n}{k}\right)$

C. $\Omega(n \lg k)$

D. $\Omega\left(\frac{n}{k} \lg \frac{n}{k}\right)$

ugcnetcse-nov2017-paper3

Answer key

## 40.0.43 UGC NET CSE | November 2017 | Part 3 | Question: 33 top

Consider the recurrence relation:

$$\begin{aligned} T(n) &= 8T\left(\frac{n}{2}\right) + Cn, \text{if } n > 1 \\ &= b, \text{if } n = 1 \end{aligned}$$

Where $b$ and $c$ are constants.

The order of the algorithm corresponding to above recurrence relation is

A. $n$

B. $n^2$

C. $n \lg n$

D. $n^3$

ugcnetcse-nov2017-paper3

Answer key

## 40.0.44 UGC NET CSE | November 2017 | Part 2 | Question: 23 top

Let $G$ be an undirected connected graph with distinct edge weight. Let $E_{\max}$ be the edge with maximum weight and $E_{\min}$ the edge with minimum weight. Which of the following statements is false?

A. Every minimum spanning tree of $G$ must contain $E_{\min}$
B. If $E_{\max}$ is in minimum spanning tree, then its removal must disconnect $G$
C. No minimum spanning tree contains $E_{\max}$
D. $G$ has a unique minimum spanning tree

ugcnetcse-nov2017-paper2

Answer key

## 40.0.45 UGC NET CSE | November 2017 | Part 3 | Question: 35 top

A text is made up of the characters $a, b, c, d, e$ each occuring with the probability $0.11, 0.40, 0.16, 0.09$ and $0.24$ respectively. The optimal Huffman coding technique will have the average length of

A. $2.40$ B. $2.16$ C. $2.26$ D. $2.15$

ugcnetcse-nov2017-paper3

Answer key

## 40.0.46 UGC NET CSE | November 2017 | Part 3 | Question: 63 top

Consider the following languages:

$L_1 = \{a^m b^n \mid m \neq n\}$

$L_2 = \{a^m b^n \mid m = 2n+1\}$

$L3 = \{a^m b^n \mid m \neq 2n\}$

Which one of the following statements is correct?

A. Only $L_1$ and $L_2$ are context free languages
B. Only $L_1$ and $L_3$ are context free languages
C. Only $L_2$ and $L_3$ are context free languages
D. $L_1$, $L_2$ and $L_3$ are context free languages

ugcnetcse-nov2017-paper3

## 40.0.47 UGC NET CSE | November 2017 | Part 3 | Question: 66 top

For any binary $(n, h)$ linear code with minimum distance $(2t+1)$ or greater $n - h \geq \log_2 \left[ \sum_{i=0}^{\alpha} \binom{n}{i} \right]$ where $\alpha$ is

A. $2t+1$ B. $t+1$ C. $t-1$ D. $t$

ugcnetcse-nov2017-paper3

## 40.0.48 UGC NET CSE | October 2020 | Part 1 | Question: 35 top

Match $\text{List I}$ with $\text{List II}$

| | List I | List II | |
|---|---|---|---|
| $(A)$ | Input | $(I)$ | Mouse |
| $(B)$ | Output | $(II)$ | Monitor |
| $(C)$ | Memory | $(III)$ | Cache |
| $(D)$ | Software | $(IV)$ | Python |

Choose the correct answer from the options given below:

A. $(A)-(I),(B)-(II),(C)-(IV),(D)-(III)$
B. $(A)-(I),(B)-(III),(C)-(II),(D)-(IV)$
C. $(A)-(III),(B)-(II),(C)-(I),(D)-(IV)$
D. $(A)-(I),(B)-(II),(C)-(III),(D)-(IV)$

ugcnetcse-oct2020-paper1

Answer key

## 40.0.49 UGC NET CSE | November 2017 | Part 3 | Question: 60 top

Standard planning algorithms assume environment to be _____

A. Both deterministic and fully observable
B. Neither deterministic nor fully observable
C. Deterministic but not fully observable
D. Not deterministic but fully observable

ugcnetcse-nov2017-paper3

Answer key

## 40.0.50 UGC NET CSE | November 2017 | Part 3 | Question: 39 top

Consider the following HTML table definition:

```
<table border =1>
  <tr>
    <td colspan=2> Text A </td>
  </tr>
<tr>
  <td> Text B </td>
  <td>zText C </td>
</tr>
<tr>
  <td> rowspan =2> Text D </td>
  <td> Text E </td>
</tr>
<tr>
  <td> Text F </td>
</tr>
</table>
```

The above HTML code will render on screen as

A.

| | |
|---|---|
| Text A | |
| Text B | Text C |
| Text D | Text E |
| Text F | |

B.

| | |
|---|---|
| Text A | Text B |
| Text C | |
| Text D | Text E |
| | Text F |

C.

| | |
|---|---|
| Text A | |
| Text B | Text C |
| Text D | Text E |
| | Text F |

D.

| | |
|---|---|
| Text A | |
| Text B | Text C |
| Text D | Text E |
| Text F | |

ugcnetcse-nov2017-paper3

## 40.0.51 UGC NET CSE | November 2017 | Part 3 | Question: 40 top

Which of the following statements is/are TRUE?

a. In HTML, character entitites are used to incorporate external content into a web page, such as images.

b. Once a web server returns a cookie to a browser, the cookie will be included in all future requests from the browser to the same server.

A. Only (a) is TRUE
B. Only (b) is TRUE
C. Both (a) and (b) are TRUE
D. Neither (a) nor (b) is TRUE

ugcnetcse-nov2017-paper3

## 40.0.52 UGC NET CSE | November 2017 | Part 3 | Question: 47 top

A simple stand – alone software utility is to be developed in 'C' programming by a team of software experts for a computer running Linux and the overall size of this software is estimated to be $20,000$ lines of code. Considering $(a, b) = 2.4, 1.05)$ as multiplicative and exponention factor for the basic COCOMO effort estimation equation and $(c, d) = (2.5, 0.38)$ as multiplicative and exponention factor for the basic COCOMO development time estimation equation, approximately how long does the software project take to complete?

A. $10.52$ months
B. $11.52$ months
C. $12.52$ months
D. $14.52$ months

ugcnetcse-nov2017-paper3

Answer key

## 40.0.53 UGC NET CSE | November 2017 | Part 3 | Question: 43 top

Statistical software quality assurance in software engineering involves _____

A. using sampling in place of exhaustive testing of software
B. surveying customers to find out their opinions about product quality
C. tracing each defect to its underlying cause, isolating the vital few causes, and moving to correct them
D. tracing each defect to its underlying causes, and using the Pareto principle to correct each problem found

ugcnetcse-nov2017-paper3

Answer key

## 40.0.54 UGC NET CSE | November 2017 | Part 3 | Question: 46 top

Consider the method mcq ();

```
int mcq (boolean a, boolean b, boolean c, boolean d)
{
   int ans=1;
   if (a) {ans=2;}
   else if (b) {ans=3;}
   else if (c) {
            if (d) {ans=4;}
            }
   return ans;
}
```

If

$M1 =$ Number of tests to exhaustively test mcq();

$M2 =$ Minimum number of tests to achieve full statement coverage for mcq (); and

$M3 =$ Minimum number of tests to achieve full branch coverage for mcq ( );

then $(M1, M2, M3) =$ _____

A. $(16,3,5)$ B. $(8,5,3)$ C. $(8,3,5)$ D. $(16,4,4)$

ugcnetcse-nov2017-paper3

Answer key

## 40.0.55 UGC NET CSE | November 2017 | Part 3 | Question: 44 top

Which of the following statements is/are FALSE with respect to software testing?

$S1$: White-box tests are based on specifications; better at telling whether program meets specification, better at finding errors of ommission.

$S2$: Black-box tests are based on code; better for finding crashes, out of bounds errors, file not closed errors.

$S3$: Alpha testing is conducted at the developer's site by a team of highly skilled testers for software that is developed as a product to be used by many customers.

A. Only $S1$ and $S2$ are FALSE
B. Only $S1$ and $S3$ are FALSE
C. Only $S2$ and $S3$ are FALSE
D. All of $S1, S2$, and $S3$ are FALSE

ugcnetcse-nov2017-paper3

## 40.0.56 UGC NET CSE | November 2017 | Part 3 | Question: 45 top

A signal processor software is expected to operate for $91.25$ days after repair, and the mean software repair time is expected to be $5$ minutes. Then, the availability of the software is

A. $96.9862\%$ B. $97.9862\%$ C. $98.9962\%$ D. $99.9962\%$

ugcnetcse-nov2017-paper3

## 40.0.57 UGC NET CSE | November 2017 | Part 3 | Question: 51 top

User level threads are threads that are visible to the programmer and are unknown to the kernel. The operating system kernel supports and manages kernel level threads. Three different types of models relate user and kernel level threads.

Which of the following statements is/are true?

a.
i. The Many – to – one model maps many user threads to one kernel thread
ii. The one – to – one model maps one user thread to one kernel thread
iii. The many – to – many model maps many user threads to smaller or equal kernel threads

b.
i. Many – to – one model maps many kernel threads to one user thread
ii. One – to – one model maps one kernel thread to one user thread
iii. Many – to – many model maps many kernel threads to smaller or equal user threads

A. (a) is true; (b) is false
B. (a) is false; (b) is true
C. Both (a) and (b) are true
D. Both (a) and (b) are false

ugcnetcse-nov2017-paper3

Answer key

## 40.0.58 UGC NET CSE | November 2017 | Part 3 | Question: 49 top

Consider the following four processes with the arrival time and length of CPU burst given in milliseconds:

| Process | Arrival Time | Burst Time |
|---|---|---|
| $P_1$ | $0$ | $8$ |
| $P_2$ | $1$ | $4$ |
| $P_3$ | $2$ | $9$ |
| $P_4$ | $3$ | $5$ |

The average waiting time for preemptive SJF scheduling algorithm is _____

A. $6.5$ ms
B. $7.5$ ms
C. $6.75$ ms
D. $7.75$ ms

ugcnetcse-nov2017-paper3

## 40.0.59 UGC NET CSE | November 2017 | Part 3 | Question: 41 top

Which of the following statements is/are TRUE regarding JAVA?

a. Constants that cannot be changed are declared using 'static' keyword.
b. A class can only inherit one class but can implement multiple interfaces.

A. Only (a) is TRUE
B. Only (b) is TRUE
C. Both (a) and (b) are TRUE
D. Neither (a) nor (b) is TRUE

ugcnetcse-nov2017-paper3

Answer key

## 40.0.60 UGC NET CSE | November 2017 | Part 3 | Question: 50 top

Consider a virtual page reference string $7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1$. Suppose a demand paged virtual memory system running on a computer system such that the main memory has $3$ page frames. Then _____ page replacement algorithm has minimum number of page faults.

A. FIFO
B. LIFO
C. LRU
D. Optimal

ugcnetcse-nov2017-paper3

## 40.0.61 UGC NET CSE | November 2017 | Part 3 | Question: 52 top

Consider a system with five processes $P_0$ through $P_4$ and three resource types $A, B$ and $C$. Resource type $A$ has seven instances, resource type $B$ has two instances and resource type $C$ has six instances suppose at time $T_0$ we have the following allocation.

| Process | Allocation | | | Request | | | Available | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | A | B | C | A | B | C |
| $P_0$ | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $P_1$ | 2 | 0 | 0 | 2 | 0 | 2 | | | |
| $P_2$ | 3 | 0 | 3 | 0 | 0 | 0 | | | |
| $P_3$ | 2 | 1 | 1 | 1 | 0 | 0 | | | |
| $P_4$ | 0 | 2 | 2 | 0 | 0 | 2 | | | |

If we implement Deadlock detection algorithm we claim that system is _____

A. Semaphore
B. Deadlock state
C. Circular wait
D. Not in deadlock state

ugcnetcse-nov2017-paper3

Answer key

## 40.0.62 UGC NET CSE | November 2017 | Part 3 | Question: 54 top

The Bounded buffer problem is also known as _____

A. Producer – consumer problem
B. Reader – writer problem
C. Dining Philosophers problem
D. Both $(2)$ and $(3)$

ugcnetcse-nov2017-paper3

Answer key

## 40.0.63 UGC NET CSE | November 2017 | Part 3 | Question: 56 top

If $b$ is the branching factor and $m$ is the maximum depth of the search tree, what is the space complexity of greedy search?

A. $O(b+m)$ B. $O(bm)$ C. $O(b^m)$ D. $O(m^b)$

ugcnetcse-nov2017-paper3

Answer key

## 40.0.64 UGC NET CSE | November 2017 | Part 3 | Question: 53 top

Consider a disk queue with requests for I/O to blocks on cylinders $98, 183, 37, 122, 14, 124, 65, 67$. Suppose SSTF disk scheduling algorithm implemented to meet the requests then the total number of head movements are _____ if the disk head is initially at $53$.

A. $224$ B. $248$ C. $236$ D. $240$

ugcnetcse-nov2017-paper3

## 40.0.65 UGC NET CSE | November 2017 | Part 3 | Question: 55 top

55. In Artificial Intelligence (AI), which agent deals with happy and unhappy state ?

(1) Simple reflex agent (2) Model based agent

(3) Learning agent (4) Utility based agent

ugcnetcse-nov2017-paper3

## 40.0.66 UGC NET CSE | November 2017 | Part 3 | Question: 57 top

Let $P, Q, R$ and $S$ be Propositions. Assume that the equivalences $P \Leftrightarrow (Q \vee \neg Q)$ and $Q \Leftrightarrow R$ hold. Then the truth value of the formula $(P \wedge Q) \Rightarrow ((P \wedge R) \vee S)$ is always

A. True
B. False
C. Same as truth table of $Q$
D. Same as truth table of $S$

ugcnetcse-nov2017-paper3

Answer key

## 40.0.67 UGC NET CSE | November 2017 | Part 3 | Question: 58 top

"If $X$, then $Y$ unless $Z$" is represented by which of the following formulae in propositional logic?

A. $(X \wedge Y) \rightarrow \neg Z$
B. $(X \wedge \neg Z) \rightarrow Y$
C. $X \rightarrow (Y \wedge \neg Z)$
D. $Y \rightarrow (X \wedge \neg Z)$

ugcnetcse-nov2017-paper3

Answer key

## 40.0.68 UGC NET CSE | November 2017 | Part 3 | Question: 59 top

Consider the following two well-formed formulas in prepositional logic.

$F1 : P \Rightarrow \neg P$

$F2 : (P \Rightarrow \neg P) \vee (\neg P \Rightarrow P)$

Which of the following statements is correct?

A. $F1$ is Satisfiable, $F2$ is valid
B. $F1$ is unsatisfiable, $F2$ is Satisfiable
C. $F1$ is unsatisfiable, $F2$ is valid
D. $F1$ and $F2$ both are Satisfiable

ugcnetcse-nov2017-paper3

Answer key

## 40.0.69 UGC NET CSE | November 2017 | Part 3 | Question: 42 top

What is the output of the following JAVA program?

```
Class Test
{
  public static void main (String [] args)
  {
    Test obj=new Test ();
    obj.start ();
  }
  void start()
  {
    String stra="do";
    String strb=method (stra);
    System.out.print(":" +stra +strb);
  }
  String method (String stra)
  {
    stra=stra+"good";
    System.out.print(stra);
    return "good";
  }
}
```

A. dogood : dogoodgood
B. dogood : gooddogood
C. dogood : dodogood
D. dogood : dogood

ugcnetcse-nov2017-paper3

Answer key

## 40.0.70 UGC NET CSE | November 2017 | Part 3 | Question: 38 top

Which of the following statement(s) is/are TRUE regarding Java Servelets?

a. A Java Servelet is a server-side component that runs on the web server and extends the capabilities of a server.
b. A servelet can use the user interface classes like AWT or Swing.

A. Only (a) is TRUE
B. Only (b) is TRUE
C. Both (a) and (b) are TRUE
D. Neither (a) nor (b) is TRUE

ugcnetcse-nov2017-paper3

Answer key

## 40.0.71 UGC NET CSE | November 2017 | Part 3 | Question: 69 top

Consider the following LPP:

Min $Z = 2x_1 + x_2 + 3x_3$

Subject to:

$x_1 - 2x_2 + x_3 \geq 4$

$2x_1 + x_2 + x_3 \leq 8$

$x_1 - x_3 \geq 0$

$x_1, x_2, x_3 \geq 0$

The solution of this LPP using Dual Simplex Method is

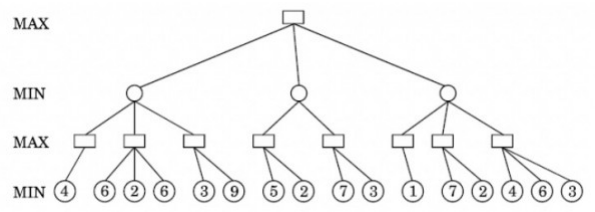
A. $x_1 = 0, x_2 = 0, x_3 = 3$ and $Z = 9$
B. $x_1 = 0, x_2 = 6, x_3 = 0$ and $Z = 6$
C. $x_1 = 4, x_2 = 0, x_3 = 0$ and $Z = 8$
D. $x_1 = 2, x_2 = 0, x_3 = 2$ and $Z = 10$

ugcnetcse-nov2017-paper3

Answer key

## 40.0.72 UGC NET CSE | December 2018 | Part 2 | Question: 97 top

Consider the following minimax game tree search




What will be the value probagated at the root?

A. $3$ B. $4$ C. $5$ D. $6$

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Answer key

## 40.0.73 UGC NET CSE | November 2017 | Part 3 | Question: 67 top

Which of the following is a valid reason for causing degeneracy in a transportation problem? Here$m$ is number of rows and $n$ is number of columns in transportation table.

A. When the number of allocations is $m+n-1$
B. When two or more occupied cells become unoccupied simultaneously
C. When the number of allocations is less than $m+n-1$
D. When a loop cannot be drawn without using unoccupied cells, except the starting cell of the loop

ugcnetcse-nov2017-paper3

Answer key

## 40.0.74 UGC NET CSE | November 2017 | Part 3 | Question: 68 top

Consider the following LPP:

Max $Z = 15x_1 + 10x_2$

Subject to the constraints

$4x_1 + 6x_2 \leq 360$

$3x_1 + 0x_2 \leq 180$

$0x_1 + 5x_2 \leq 200$

$x_1, x_2 \geq 0$

The solution of the LPP using Graphical solution technique is

A. $x_1 = 60, x_2 = 0$ and $Z = 900$
B. $x_1 = 60, x_2 = 20$ and $Z = 1100$
C. $x_1 = 60, x_2 = 30$ and $Z = 1200$
D. $x_1 = 50, x_2 = 40$ and $Z = 1150$

ugcnetcse-nov2017-paper3

Answer key

## 40.0.75 UGC NET CSE | November 2017 | Part 3 | Question: 70 top

Consider a Takagi-Sugeno – Kang (TSK) Model consisting of rules of the form:

If $x_1$ is $A_{i1}$ and ... and $x_r$ is $A_{ir}$

THEN $y = f_i(x_1, x_2, \ldots, x_t) = b_{i0} + b_{i1}x_1 + \cdots + b_{ir}x_r$

assume, $\alpha_i$ is the matching degree of rule $i$, then the total output of the model is given by:

A. $y = \sum_{i=1}^{L} \alpha_i f_i(x_1, x_2, \ldots, x_r)$

B. $y = \dfrac{\sum_{i=1}^{L} \alpha_i f_i(x_1, x_2, \ldots, x_r)}{\sum_{i=1}^{L} \alpha_i}$

C. $y = \dfrac{\sum_{i=1}^{L} f_i(x_1, x_2, \ldots, x_r)}{\sum_{i=1}^{L} \alpha_i}$

D. $y = \max_i [\alpha_i f_i(x_1, x_2, \ldots, x_r)]$

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Answer key

## 40.0.76 UGC NET CSE | November 2017 | Part 3 | Question: 71 top

Consider a single perceptron with sign activation function. The perceptron is represented by weight vector $[0.4 \quad -0.3 \quad 0.1]^t$ and a bias $\theta = 0$. If the input vector to the perceptron is $X = [0.2 \quad 0.6 \quad 0.5]$ then the output of the perceptron is

A. $1$ B. $0$ C. $-0.05$ D. $-1$

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Answer key

## 40.0.77 UGC NET CSE | November 2017 | Part 3 | Question: 72 top

The Sigmoid activation function $f(t)$ is defined as

A. $\dfrac{1}{\exp(t) + \exp(-t)}$

B. $t \exp(-t)$

C. $\dfrac{1}{1 + \exp(t)}$

D. $\dfrac{1}{1 + \exp(-t)}$

ugcnetcse-nov2017-paper3

Answer key

## 40.0.78 UGC NET CSE | November 2017 | Part 3 | Question: 74 top

Which of the following routing technique / techniques is/are used in distributed systems?

a. Fixed Routing b. Virtual Routing c. Dynamic Routing

A. (a) only B. (a) and (b) only C. (c) only D. All (a), (b), (c)

ugcnetcse-nov2017-paper3

Answer key

## 40.0.79 UGC NET CSE | November 2017 | Part 3 | Question: 64 top

A $4 \times 4$ DFT matrix is given by

$$\frac{1}{2}\begin{bmatrix} 1 & 1 & 1 & 1 \\ 1 & x & -1 & y \\ 1 & -1 & 1 & -1 \\ 1 & -j & -1 & j \end{bmatrix}$$

$j^2 = -1$

Where the values of $x$ and $y$ are _____, _____ respectively.

A. $1, -1$ B. $-1, 1$ C. $-j, j$ D. $j, -j$

ugcnetcse-nov2017-paper3

Answer key

## 40.0.80 UGC NET CSE | December 2018 | Part 2 | Question: 99 top

Consider the sentence below:

"There is a country that borders both India and Nepal"

Which of the following represents the above sentence correctly?

A. $\exists c\ \text{Country}(c) \wedge \text{Border}(c, \text{India}) \wedge Border(c, \text{Nepal})$
B. $\exists c\ \text{Country}(c) \Rightarrow [\text{Border}(c, \text{India}) \wedge Border(c, \text{Nepal})]$
C. $[\exists c\ \text{Country}(c)] \Rightarrow [\text{Border}(c, \text{India}) \wedge Border(c, \text{Nepal})]$
D. $\exists c\ \text{Border}(\text{Country}(c), \text{India} \wedge \text{Nepal})$

ugcnetcse-dec2018-paper2

Answer key

## 40.0.81 UGC NET CSE | December 2018 | Part 2 | Question: 98 top

Consider a vocabulary with only four propositions A, B, C and D. How many models are there for the following sentence?

$\neg A \vee \neg B \vee \neg C \vee \neg D$

A. $7$ B. $8$ C. $15$ D. $16$

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Answer key

## 40.0.82 UGC NET CSE | December 2018 | Part 2 | Question: 96 top

Consider the following statements related to $AND - OR$ Search algorithm.

S1 : A solution is a subtree that has a goal node at every leaf.

S2 : $OR$ nodes are analogous to the branching in a deterministic environment.

S3 : $AND$ nodes are analogous to the branching in a non-deterministic environment.

Which of the following is true referencing the above statements ?

Choose the correct answer from the code given below :

$Code$ **:**

A. $S1 – False, S2 – True, S3 – True$
B. $S1 – True, S2 – True, S3 – False$
C. $S1 – True, S2 – True, S3 – True$
D. $S1 – False, S2 – True, S3 – False$

ugcnetcse-dec2018-paper2

Answer key

## 40.0.83 UGC NET CSE | November 2017 | Part 3 | Question: 48 top

In Software Configuration Management (SCM), which of the following is a use-case supported by standard version control systems?

a. Managing several versions or release of a software
b. Filing bug reports and tracking their progress
c. Allowing team members to work in parallel
d. Identifying when and where a regression occurred

A. Only (a), (c), and (d)
B. Only (a), (b), and (c)
C. Only (a), (b), and (d)
D. Only (b), (c), and (d)

ugcnetcse-nov2017-paper3

Answer key

## 40.0.84 UGC NET CSE | December 2018 | Part 2 | Question: 95 top

Consider the following statements :

S1: A heuristic is admissible if it never overestimates the cost to reach the goal.

S2: A heuristic is monotonous if it follows triangle inequality property.

Which of the following is true referencing the above statements ?

Choose the correct answer from the code given below :

$Code$ **:**

A. Neither of the statements S1 and S2 are true
B. Statement S1 is false but statement S2 is true
C. Statement S1 is true but statement S2 is false
D. Both the statements S1 and S2 are true

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Answer key

## 40.0.85 UGC NET CSE | December 2018 | Part 2 | Question: 94 top

Match List I with List II and choose the correct answer from the code given below.

| List I | | List II | |
|---|---|---|---|
| (a) | Greedy Best-First Search | (i) | Selects a node for expansion if optimal path to that node has been found |
| (b) | A* Search | (ii) | Avoids substantial overhead associated with keeping the sorted queue of nodes |
| (c) | Recursive Best-First Search | (iii) | Suffers from excessive node generation |
| (d) | Iterative-deepening A* Search | (iv) | Time complexity depends on the quality of heuristic |

Code:

1. (a) – (i), (b)-(ii), (c)-(iii), (d)-(iv)
2. (a) – (iv), (b)-(i), (c)-(ii), (d)-(iii)
3. (a) – (iv), (b)-(iii), (c)-(ii), (d)-(i)
4. (a) – (i), (b)-(iv), (c)-(iii), (d)-(ii)

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## 40.0.86 UGC NET CSE | December 2018 | Part 2 | Question: 93 top

Consider the following terminology and match List I with List II and choose the correct answer from the code given below.

b= branching factor

d = depth of the shallowest solution

m= maximum depth of the search tree

l=depth limit

| *ListI* | **(Algorithms)** | **List II** | **(Space Complexity)** |
|---|---|---|---|
| $(a)$ | BFS search | $(i)$ | $O(bd)$ |
| $(b)$ | DFS search | $(ii)$ | $O(b^d)$ |
| $(c)$ | Depth-limited search | $(iii)$ | $O(bm)$ |
| $(d)$ | Iterative deepening search | $(iv)$ | $O(bl)$ |

Code:

A. (a) – (i), (b)-(ii), (c)-(iv), (d)-(iii)
B. (a) – (ii), (b)-(iii), (c)-(iv), (d)-(i)
C. (a) – (iii), (b)-(ii), (c)-(iv), (d)-(i)
D. (a) – (i), (b)-(iii), (c)-(iv), (d)-(ii)

ugcnetcse-dec2018-paper2

Answer key

## 40.0.87 UGC NET CSE | December 2018 | Part 2 | Question: 92 top

Which of the following is true for *semi-dynamic* environment?

A. The environment may change while the agent is deliberating
B. The environment itself does not change with the passage of time but the agent's performance score does
C. Even if the environment changes with the passage of time while deliberating, the performance score does not change.
D. Environment and performance score, both change simultaneously

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Answer key

## 40.0.88 UGC NET CSE | December 2018 | Part 2 | Question: 91 top

An agent can improve its performance by

A. Perceiving B. Responding C. Learning D. Observing

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Answer key

## 40.0.89 UGC NET CSE | December 2018 | Part 2 | Question: 88 top

Consider the following two statements:

S1 : TCP handles both congestion and flow control

S2 : UDP handles congestion but not flow control

Which of the following options is correct with respect to the above statements (S1) and (S2)?

Choose the correct answer from the code given below:

A. Neither S1 nor S2 is correct
B. S1 is not correct but S2 is correct
C. S1 is correct but S2 is not correct
D. Both, S1 and S2 are correct

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## 40.0.90 UGC NET CSE | November 2017 | Part 3 | Question: 62 top

Context free grammar is not closed under

A. Concatenation B. Complementation C. Kleene Star D. Union

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Answer key

## 40.0.91 UGC NET CSE | November 2017 | Part 3 | Question: 61 top

Which of the following statements is **not** correct?

A. Every recursive language is recursively enumerable
B. $L = \{0^n\, 1^n\, 0^n \mid n = 1, 2, 3, \ldots\}$ is recursively enumerable
C. Recursive languages are closed under intersection
D. Recursive languages are not closed under intersection

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## 40.0.92 UGC NET CSE | November 2017 | Part 3 | Question: 37 top

An XML document that adheres to syntax rules specified by XML $1.0$ specification in that it must satisfy both physical and logical structured, is called

A. Well-formed
B. Reasonable
C. Valid
D. Sophisticated

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## 40.0.93 UGC NET CSE | October 2020 | Part 1 | Question: 34 top

The word blog is derived from the word

A. My log
B. We blog
C. E blog
D. Blogger

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Answer key

## 40.0.94 UGC NET CSE | December 2018 | Part 2 | Question: 84 top

Consider the following tables (relations):

| Students | |
|---|---|
| Roll-No | Name |
| 18CS101 | Ramesh |
| 18CS102 | Mukesh |
| 18CS103 | Ramesh |

| Performance | | |
|---|---|---|
| Roll-No | Course | Marks |
| 18CS101 | DBMS | 60 |
| 18CS101 | Compiler Design | 65 |
| 18CS102 | DBMS | 80 |
| 18CS103 | DBMS | 85 |
| 18CS102 | Compiler Design | 75 |
| 18CS103 | Operating System | 70 |

Primary keys in the tables are shown using underline. Now, consider the following query:

```
SELECT S.Name, Sum (P.Marks) FROM Students, Performance P WHERE S.Roll-No=P.Roll-No GROUP BY S.Name
```

The number of rows returned by the above query is

A. $0$
B. $1$
C. $2$
D. $3$

ugcnetcse-dec2018-paper2 databases

Answer key

## 40.0.95 UGC NET CSE | October 2020 | Part 1 | Question: 36 top

Which of the International Agreements/Convention/Protocols are legally binding on the member countries

(parties)?

a. Convention on Biological Diversity b. Kyoto Protocol c. Montreal Protocol d. Paris Agreement

Choose the most appropriate answer from the options given below:

A. $c$ only B. $a$ and $c$ only C. $a$, $b$, and $c$ only D. $b$, $c$, and $d$ only

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## 40.0.96 UGC NET CSE | December 2018 | Part 2 | Question: 56 top

Consider the following method:

```
int f(int m, int n, boolean x, boolean y)
{
   int res=0;
   if (m<0) {res=n-m;}
   else if (x || y)
   {
      res=-1;
      if(n==m){res=1;}
   }
   else {res=n;}
   return res;
} /*end of f */
```

If $P$ is the minimum number of tests to achieve full statement coverage for $f()$, and $Q$ is the minimum number of tests to achieve full branch coverage for $f()$, then $(P, Q)$ =

A. $(3,4)$ B. $(4,3)$ C. $(2,3)$ D. $(3,2)$

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Answer key

## 40.0.97 UGC NET CSE | December 2018 | Part 2 | Question: 71 top

Dirty bit is used to show the

A. wrong page
B. page with corrupted data
C. page with low frequency occurrence
D. page that is modified after being loaded into cache memory

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Answer key

## 40.0.98 UGC NET CSE | December 2018 | Part 2 | Question: 68 top

In Linux operating system environment ____ command is used to print a file.

A. print B. ptr C. pr D. lpr

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Answer key

## 40.0.99 UGC NET CSE | December 2018 | Part 2 | Question: 65 top

The Third Generation mobile phones are digital and based on

A. $AMPS$ B. $D-AMPS$ C. $CDMA$ D. Broadband $CDMA$

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## 40.0.100 UGC NET CSE | December 2018 | Part 2 | Question: 51 top

Consider the $C/C++$ function $f()$ given below:

```
void f(char w[])
{
   int x=strlen(w); //length of a string
   char c;
   for (int i=0; i<x; i++)
```

```
    {
        c=w[i];
        w[i]=w[x-i-1];
        w[x-i-1] =c;
    }
}
```

Which of the following is the purpose of $f()$ ?

A. It outputs the contents of the array in reverse order
B. It outputs the contents of the array in the original order
C. It outputs the contents of the array with the characters shifted over by one position
D. It outputs the contents of the array with the characters rearranged so they are no longer recognized as the words in the original phrase

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Answer key

## 40.0.101 UGC NET CSE | December 2018 | Part 2 | Question: 62 top

The four byte IP Address consists of

A. Network Address
B. Host Address
C. Both Network and Host Addresses
D. Neither Network nor Host Address

The four byte IP address consists of

A. Network Address
B. Host Address
C. Both Network and Host Addresses
D. Neither Network nor Host Addresses

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Answer key

## 40.0.102 UGC NET CSE | December 2018 | Part 2 | Question: 61 top

Match the following Secret Key Algorithms (list I) with Corresponding Key Lengths (List II) and choose the correct answer from the code given below:

| | List I | | List II |
|---|---|---|---|
| $(a)$ | Blowfish | $(i)$ | 128 – 256 bits |
| $(b)$ | DES | $(ii)$ | 128 bits |
| $(c)$ | IDEA | $(iii)$ | 1-448 bits |
| $(d)$ | RC5 | $(iv)$ | 56 bits |

Code:

A. (a) – (iv), (b)-(ii), (c ) -(ii) , d-(i)
B. (a) – (iii), (b)-(iv), (c ) -(i) , d-(ii)
C. (a) – (iii), (b)-(iv), (c ) -(ii) , d-(i)
D. (a) – (ii), (b)-(iii), (c ) -(iv) , d-(i)

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Answer key

## 40.0.103 UGC NET CSE | December 2018 | Part 2 | Question: 60 top

Software coupling involves dependencies among pieces of software called modules. Which of the following are correct statements with respect to module coupling ?

P : Common coupling occurs when two modules share the same global data

Q : Control coupling occurs when modules share a composite data structure and use only parts of it

R : Content coupling occurs when one module modifies or relies on the internal working of another module

Choose the correct answer from the code given below :

$Code$ :

A. P and Q only B. P and R only C. Q and R only D. All of P, Q and R

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## 40.0.104 UGC NET CSE | December 2018 | Part 2 | Question: 59 top

Which of the following is **not** one of the principles of agile software development method?

A. Customer involvement
B. Embrace change
C. Incremental delivery
D. Following the plan

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Answer key

## 40.0.105 UGC NET CSE | December 2018 | Part 2 | Question: 58 top

Which of the following statements is/are true ?

$P$ : Software Reengineering is preferable for software products having high failure rates, having poor design and/or having poor code structure.

$Q$ : Software Reverse Engineering is the process of analyzing software with the objective of recovering its design and requirement specification.

Choose the correct answer from the code given below :

A. $P$ only B. $Q$ only C. Both $P$ and $Q$ D. Neither $P$ nor $Q$

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## 40.0.106 UGC NET CSE | December 2018 | Part 2 | Question: 55 top

Which of the following statements is/are $false$ ?

$P$ : The clean-room strategy to software engineering is based on the incremental software process model.

$Q$ : The clean-room strategy to software engineering is one of the ways to overcome “unconscious” copying of copyrighted code.

Choose the correct answer from the code given below:

$Code$ :

A. $P$ only B. $Q$ only C. Both $P$ and $Q$ D. Neither $P$ nor $Q$

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## 40.0.107 UGC NET CSE | December 2018 | Part 2 | Question: 76 top

_____ system call creates new process in Unix.

A. create B. create new C. fork D. fork new

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Answer key

## 40.0.108 UGC NET CSE | December 2018 | Part 2 | Question: 54 top

Match each $\mathrm{UML}$ diagram in $\mathrm{List\ I}$ to its appropriate description in $\mathrm{List\ II}$.

| | List I | | List II |
|---|---|---|---|
| (a) | State Diagram | (i) | Describes how the external entities (people, devices) can interect with the System |
| (b) | Use Case Diagram | (ii) | Used to describe the static or structural view of a system |
| (c) | Class Diagram | (iii) | Used to show the flow of a business process, the steps of a use-case or the logic of an object behaviour |
| (d) | Activity Diagram | (iv) | Used to describe the dynamic behaviour of objects and could also be used to describe the entire system behaviour |

**Code :**

A. (a)-(i); (b)-(iv); (c)-(ii); (d)-(iii)
B. (a)-(iv); (b)-(ii); (c)-(i); (d)-(iii)
C. (a)-(i); (b)-(iv); (c)-(iii); (d)-(ii)
D. (a)-(iv); (b)-(i); (c)-(ii); (d)-(iii)

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## 40.0.109 UGC NET CSE | December 2018 | Part 2 | Question: 53 top

Software products need perfective maintenance for which of the following reasons?

A. To rectify bugs observed while the system is in use
B. When the customers need the product to run on new platforms
C. To support new features that users want it to support
D. To overcome wear and tear caused by the repeated use of the software

ugcnetcse-dec2018-paper2

Answer key

## 40.0.110 UGC NET CSE | December 2018 | Part 2 | Question: 52 top

The Software Requirement Specification $(SRS)$ is said to be _____ if and only if no subset of individual requirements described in it conflict with each other.

A. Correct
B. Consistent
C. Unambiguous
D. Verifiable

ugcnetcse-dec2018-paper2

Answer key

## 40.0.111 UGC NET CSE | December 2018 | Part 2 | Question: 14 top

A computer uses a memory unit with $256$ K words of $32$ bits each. A binary instruction code is stored in one word of memory. The instruction has four parts: an indirect bit, an operation code and a register code part to specify one of $64$ registers and an address part. How many bits are there in the operation code, the register code part and the address part?

A. $7,6,18$
B. $6,7,18$
C. $7,7,18$
D. $18,7,7$

ugcnetcse-dec2018-paper2

Answer key

## 40.0.112 UGC NET CSE | October 2020 | Part 1 | Question: 17 top

Which of the following are useful in positive components of classroom communication?

a. Restrictive actions
b. Empathy
c. Punctuality
d. Follow-up
e. Scattered reflections

Choose the most appropriate answer from the options given below:

A. $(a),(b),(c)$ only
B. $(b),(c),(d)$ only
C. $(c),(d),(e)$ only
D. $(a),(d),(e)$ only

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## 40.0.113 UGC NET CSE | October 2020 | Part 1 | Question: 26 top

Which one of the following schools has not accepted anumana (inference) as a valid source of knowledge?

A. Advaita Vedanta B. Visistadvaita C. Charvaka D. Sankhya

ugcnetcse-oct2020-paper1

Answer key

## 40.0.114 UGC NET CSE | October 2020 | Part 1 | Question: 37 top

Given below are two statements: One is labelled as Assertion $(A)$ and the other is labelled as Reason $(R)$

Assertion (A) : Carbon dioxide emissions from bioenergy. Production have traditionally been excluded from most emission inventories and climate impact studies.

Reason (R) : Carbon dioxide emissions associated with production of bioenergy are significantly less compared to those from combustion of fossil fuels.

In the light of the above statements, choose the correct answer from the options given below:

A. Both $(A)$ and $(R)$ are true and $(R)$ is the correct explanation of $(A)$
B. Both $(A)$ and $(R)$ are true but $(R)$ is NOT the correct explanation of $(A)$
C. $(A)$ is true but $(R)$ is false
D. $(A)$ is false but $(R)$ is true

ugcnetcse-oct2020-paper1

## 40.0.115 UGC NET CSE | October 2020 | Part 1 | Question: 24 top

In a $100$ meters race, $A$ beat $B$ by $10$ meter or $2$ second. What is the speed of $A$?

A. $5$ Km/h B. $10$ Km/h C. $15$ Km/h D. $20$ Km/h

ugcnetcse-oct2020-paper1

Answer key

## 40.0.116 UGC NET CSE | October 2020 | Part 1 | Question: 23 top

If some pens are pencils but no pencil is sharpener then

a. All pencils are pens b. Some sharpeners are pens c. Some pens are not sharpener d. Some pencils are not pens

Choose the correct answer from the options given below:

A. $(a)$ and $(c)$ only B. $(b)$ and $(c)$ only C. $(a)$ and $(d)$ only D. $(b)$ and $(d)$ only

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Answer key

## 40.0.117 UGC NET CSE | December 2018 | Part 2 | Question: 75 top

A process residing in Main Memory and Ready and Waiting for execution, is kept on

A. Execution Queue B. Job Queue C. Ready Queue D. Wait Queue

ugcnetcse-dec2018-paper2

Answer key

## 40.0.118 UGC NET CSE | December 2018 | Part 2 | Question: 77 top

An attribute $A$ of datatype varchar($20$) has the value '$xyz'$, and the attribute $B$ of datatype char($20$) has the value "$lmnop$", then the attribute $A$ has _____ spaces and attribute $B$ has ____ spaces.

A. $3,5$ B. $20,20$ C. $3,20$ D. $20,5$

ugcnetcse-dec2018-paper2

Answer key

## 40.0.119 UGC NET CSE | October 2020 | Part 1 | Question: 21 top

In a park, $A, B, C, D, E$ and $F$ are sitting. $C$ is the brother of $D$'s husband and son of $A$. $F$ is the daughter of $D$ and sister of $E$.

a. $E$ is the grandson of $A$
b. $F$ is the daughter of $C$
c. $B$ is the father of $F$
d. There are one son and one daughter in the group
e. $C$ is the uncle of $E$

Choose the correct answer from the options given below:

A. $(A), (B)$ and $(C)$ only
B. $(A), (C)$ and $(E)$ only
C. $(B), (D)$ and $(E)$ only
D. $(B), (C)$ and $(D)$ only

ugcnetcse-oct2020-paper1

Answer key

## 40.0.120 UGC NET CSE | December 2018 | Part 2 | Question: 49 top

What does the following Java function perform? (Assume int occupies four bytes of storage)

```
public static int f(int a)
{   // Pre-conditions : a > 0 and no oveflow/underflow occurs
    int b=0;
    for (int i=0; i<32; i++)
    {
        b = b<<1;
        b=b | ( a & 1);
        a=a >>>1; // This is a logical shift
    }
    return b;
}
```

A. Returns the int that has the binary representation of integer a
B. Return the int that has reversed binary representation of integer a
C. Return the int that represents the number of $1$'s in the binary representation of integer a
D. Return the int that represents the number of $0$'s in the binary representation of integer a

ugcnetcse-dec2018-paper2

Answer key

## 40.0.121 UGC NET CSE | December 2018 | Part 2 | Question: 47 top

Consider the following two $C++$ programs $P1$ and $P2$ and two statements $S1$ and $S2$ about these programs:

| $P1$ | $P2$ |
|---|---|

| | |
|---|---|
| void f(int a, int *b, int &c)<br>{<br>a=1;<br>*b=2;<br>c=3;<br>}<br>int main()<br>{<br>int i=0;<br>f(i, &i, i);<br>count <<i;<br>} | double a=1, b=2;<br>double &f(double &d)<br>{<br>d=4;<br>return b;<br>}<br>int main()<br>{<br>f(a)=5;<br>count < < a< < ":" < < b;<br>} |

$S1$ : $P1$ prints out $3$.

$S2$ : $P2$ prints out $4:2$

What can you say about the statements $S1$ and $S2$?

$Code:$

A. Only $S1$ is true
B. Only $S2$ is true
C. Both $S1$ and $S2$ are true
D. Neither $S1$ nor $S2$ is true

ugcnetcse-dec2018-paper2

Answer key

## 40.0.122 UGC NET CSE | December 2018 | Part 2 | Question: 46 top

Consider the following pseudo-code fragment, where $m$ is a non-negative integer that has been initialized:

$p = 0$

$k = 0$

while $(k < m)$

$p = p + 2^k$

$k = k + 1$

end while

Which of the following is a loop invariant for the while statement?

(Note: a loop invariant for a while statement is an assertion that is true each time the guard is evaluated during the execution of the while statement).

A. $p = 2^k - 1$ and $0 \leq k < m$
B. $p = 2^{k+1} - 1$ and $0 \leq k < m$
C. $p = 2^k - 1$ and $0 \leq k \leq m$
D. $p = 2^{k+1} - 1$ and $0 \leq k \leq m$

ugcnetcse-dec2018-paper2

Answer key

## 40.0.123 UGC NET CSE | December 2018 | Part 2 | Question: 45 top

In $3D$ Graphics, which of the following statements is/are true?

P: Back-face culling is an example of image-precision visible-surface determination procedure.

Q: Z- buffer is a $16$-bit, $32$-bit, or $64$ bit field associated with each pixel in a frame buffer that can be used to determine the visible surfaces at each pixel

Choose the correct answer from the code given below :

$Code:$

A. P only
B. Q only
C. P and Q
D. Neither P nor Q

ugcnetcse-dec2018-paper2

Answer key

## 40.0.124 UGC NET CSE | December 2018 | Part 2 | Question: 44 top

In $3D$ Graphics, which of the following statements about perspective and parallel projection is/are true?

P : In a perspective projection, the farthest an object is from the center of projection, the smaller it appears

Q : Parallel projection is equivalent to a perspective projection where the viewer is standing infinitely far away

R : Perspective projections do not preserve straight lines.

Choose the correct answer from the code given below:

$Code$ **:**

A. P and Q only B. P and R only C. Q and R only D. P, Q and R

ugcnetcse-dec2018-paper2

Answer key

## 40.0.125 UGC NET CSE | December 2018 | Part 2 | Question: 43 top

Consider the midpoint (or Bresenham) algorithm for rasterizing lines given below:

1. Input $(x_1, y_1)$ and $(x_2, y_2)$
2. $y = y_1$
3. $d = f(x_1 + 1, y_1 + 1/2)$ //f is the implicit form of a line
4. for $x = x_1$ to $x_2$
5. do
6. plot$(x, y)$
7. if $(d < 0)$
8. then
9. $y = y + 1$
10. $d = d + (y_1 - y_2) + (x_2 - x_1)$
11. else
12. $d = d + (y_1 - y_2)$
13. end
14. end

Which statements are true?

P: For a line with slope $m > 1$, we should change the outer loop in line (4) to be over $y$

Q: Lines (10) and (12) update the decision variable $d$ through an incremental evaluation of the line equation $f$

R: The algorithm fails if $d$ is over $0$

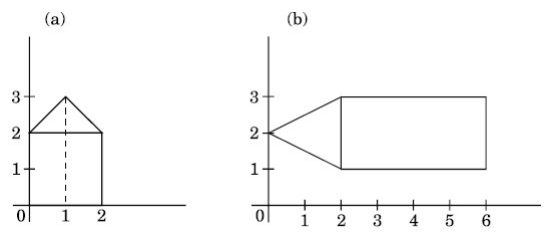
Choose the correct answer from the code given below:

A. P only B. P and Q only C. Q and R only D. P, Q and R

ugcnetcse-dec2018-paper2

## 40.0.126 UGC NET CSE | December 2018 | Part 2 | Question: 42 top

Which homogeneous $2D$ matrix transforms the figure (a) on the left side to figure (b) on the right?



A. $\begin{pmatrix} 0 & 2 & -6 \\ 2 & 0 & 1 \\ 0 & 0 & 1 \end{pmatrix}$

B. $\begin{pmatrix} 0 & -2 & 6 \\ 1 & 0 & 1 \\ 0 & 0 & 1 \end{pmatrix}$

C. $\begin{pmatrix} 1 & -2 & 6 \\ 1 & 0 & 2 \\ 0 & 0 & 1 \end{pmatrix}$

D. $\begin{pmatrix} 0 & 2 & 6 \\ 1 & 0 & 1 \\ 0 & 0 & 1 \end{pmatrix}$

ugcnetcse-dec2018-paper2

Answer key

## 40.0.127 UGC NET CSE | December 2018 | Part 2 | Question: 41 top

If the frame buffer has $10$-bits per pixel and $8$-bits are allocated for each of the $R, G,$ and $B$ components, then what would be the size of the color lookup table (LUT)?

A. $(2^8 + 2^9)$ bytes
B. $(2^{10} + 2^8)$ bytes
C. $(2^{10} + 2^{24})$ bytes
D. $(2^{10} + 2^{11})$ bytes

ugcnetcse-dec2018-paper2

Answer key

## 40.0.128 UGC NET CSE | December 2018 | Part 2 | Question: 40 top

The grammar $S \rightarrow (S) \mid SS \mid \epsilon$ is ***not*** suitable for predictive parsing because the grammar is

A. Right recursive
B. Left recursive
C. Ambiguous
D. An operator grammar

ugcnetcse-dec2018-paper2

Answer key

## 40.0.129 UGC NET CSE | December 2018 | Part 2 | Question: 38 top

Which one of the following problems is decidable for recursive languages $(L)$ ?

A. Is $L = \phi$ ?
B. Is $w \in L$, where $w$ is a string ?
C. Is $L = \Sigma^*$ ?
D. Is $L = R$, where $R$ is a given regular set ?

ugcnetcse-dec2018-paper2

Answer key

## 40.0.130 UGC NET CSE | December 2018 | Part 2 | Question: 28 top

In K-coloring of an undirected graph $G = (V, E)$ is a function. $c : V \rightarrow \{0, 1, \ldots, K-1\}$ such that $c(u) \neq c(v)$ for every edge $(u, v) \in E$.

Which of the following is ***not*** correct?

A. $G$ is bipartite
B. $G$ is $2$-colorable
C. $G$ has cycles of odd length
D. $G$ has no cycles of odd length

ugcnetcse-dec2018-paper2

## 40.0.131 UGC NET CSE | December 2018 | Part 2 | Question: 78 top

Data warehouse contains _____ data that is never found in operational environment.

A. Summary
B. Encoded
C. Encrypted
D. Scripted

ugcnetcse-dec2018-paper2

Answer key

## 40.0.132 UGC NET CSE | December 2018 | Part 2 | Question: 26 top

In a ternary tree, the number of internal nodes of degree $1, 2,$ and $3$ is $4, 3,$ and $3$ respectively. The number of leaf nodes in the ternary tree is

A. $9$ B. $10$ C. $11$ D. $12$

ugcnetcse-dec2018-paper2

Answer key

## 40.0.133 UGC NET CSE | December 2018 | Part 2 | Question: 20 top

If a graph (G) has no loops or parallel edges, and if the number of vertices (n) the graph is $n \geq 3$, then graph G is Hamiltonian if

A. $\deg(v) \geq \frac{n}{3}$ for each vertex v B. $\deg(v) + \deg(w) \geq n$ whenever v and w are not connected by an edge C. $E(G) \geq \frac{1}{3}(n-1)(n-2)$ Choose the correct answer from the code given below:

A. (i) and (iii) only B. (ii) only C. (ii) and (iii) only D. (iii) only

ugcnetcse-dec2018-paper2

Answer key

## 40.0.134 UGC NET CSE | December 2018 | Part 2 | Question: 19 top

Consider a system with $2$ level cache. Access times of Level $1$ cache, Level $2$ cache and main memory are $0.5$ ns, $5$ ns and $100$ ns respectively. The hit rates of Level $1$ and Level $2$ caches are $0.7$ and $0.8$ respectively. What is the average access time of the system ignoring the search time within the cache?

A. $35.20$ ns B. $7.55$ ns C. $20.75$ ns D. $24.35$ ns

ugcnetcse-dec2018-paper2

Answer key

## 40.0.135 UGC NET CSE | December 2018 | Part 2 | Question: 48 top

Consider the following recursive Java function $f$ that takes two long arguments and returns a float value :

```
public static float f(long m, long n)
{
   float result = (float) m / (float) n;
   if (m<0 || n <0)
      return 0.0f;
   else
      result +=f(m*2, n*3);
   return result;
}
```

Which of the following integers best approximates the value of $f(2, 3)$?

A. $0$ B. $1$ C. $2$ D. $3$

ugcnetcse-dec2018-paper2

## 40.0.136 UGC NET CSE | December 2018 | Part 2 | Question: 50 top

Which of the following HTML5 codes will affect the horizontal as well as vertical alignment of the table content ?

A. <td halign =”middle” valign=”center”> BASH</td>
B. <td align =”middle” valign=”center”> BASH</td>
C. <td style=”horizontal-align:center; vertical-align:middle;”> BASH</td>
D. <td style=”text-align:center; vertical-align:middle;”> BASH</td>

ugcnetcse-dec2018-paper2

Answer key

## 40.0.137 UGC NET CSE | December 2018 | Part 2 | Question: 13 top

Consider the following statements :

i. Auto increment addressing mode is useful in creating self-relocating code.
ii. If auto increment addressing mode is included in an instruction set architecture, then an additional ALU is required for effective address calculation.
iii. In auto incrementing addressing mode, the amount of increment depends on the size of the data item accessed.

Which of the above statements is/are true?

A. (i) and (ii) only
B. (ii) and (iii) only
C. (iii) only
D. (ii) only

ugcnetcse-dec2018-paper2

Answer key

## 40.0.138 UGC NET CSE | December 2018 | Part 2 | Question: 67 top

Which of the following statements/s is/are $true$ ?

i. Windows XP supports both peer-peer and client-server networks.
ii. Windows XP implements Transport protocols as drivers that can be loaded and unloaded from the system given dynamically.

Choose the correct answer from the code given below:

$Code$ **:**

A. (i) only
B. (ii) only
C. Neither (i) nor (ii)
D. Both (i) and (ii)

ugcnetcse-dec2018-paper2

## 40.0.139 UGC NET CSE | December 2018 | Part 2 | Question: 81 top

Data scrubbing is

A. A process to reject data from the data warehouse and to create the necessary indexes.
B. A process to load the data in the data warehouse and to create the necessary indexes.
C. A process to upgrade the quality of data after it is moved into a data warehouse
D. A process to upgrade the quality of data before it is moved into a data warehouse

ugcnetcse-dec2018-paper2

Answer key

## 40.0.140 UGC NET CSE | December 2018 | Part 2 | Question: 80 top

Which of the following statement/s is/are true ?

i. Facebook has the world's largest Hadoop Cluster.
ii. Hadoop $2.0$ allows live stream processing of Real time data.

Choose the correct answer from the code given below :

$Code$ **:**

A. (i) only
B. (ii) only
C. Both (i) and (ii)
D. Neither (i) nor (ii)

ugcnetcse-dec2018-paper2

Answer key

## 40.0.141 UGC NET CSE | December 2018 | Part 2 | Question: 79 top

_____ command is used to remove a relation from SQL database.

A. Drop table
B. Delete table
C. Remove table
D. Update table

ugcnetcse-dec2018-paper2

Answer key

## 40.0.142 UGC NET CSE | October 2020 | Part 1 | Question: 22 top

The ratio of ages of two persons $A$ and $B$ is $3:4$ and that of ages $B$ and $C$ is $4:5$. If the average of all three is $40$ years, what is $B$'s age?

A. $20$ years
B. $30$ years
C. $40$ years
D. $50$ years

ugcnetcse-oct2020-paper1

Answer key

## 40.0.143 UGC NET CSE | October 2020 | Part 1 | Question: 25 top

Three pipes fill a tank in $4$ hours. If two of them take $8$ and $12$ hours each to fill the tank, how many hours will the third pipe take to fill the tank?

A. $6$ hours
B. $15$ hours
C. $18$ hours
D. $24$ hours

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Answer key

## 40.0.144 UGC NET CSE | October 2020 | Part 1 | Question: 20 top

Match List-I with List-II

| | List I (Medium) | | List II (Example for description) |
|---|---|---|---|
| $(A)$ | Newspaper | $(I)$ | Networking |
| $(B)$ | Radio and television | $(II)$ | Audio, Video and graphics |
| $(C)$ | Social Media | $(III)$ | Broadsheet |
| $(D)$ | Multi-media | $(IV)$ | Broadcasting |

Choose the correct answer from the options given below:

A. $(A)-(III),(B)-(IV),(C)-(I),(D)-(II)$
B. $(A)-(IV),(B)-(I),(C)-(II),(D)-(III)$
C. $(A)-(I),(B)-(II),(C)-(III),(D)-(IV)$
D. $(A)-(II),(B)-(III),(C)-(IV),(D)-(I)$

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Answer key

## 40.0.145 UGC NET CSE | October 2020 | Part 1 | Question: 50 top

Read the passage and answer the question:

Through their work and the efforts of others, managers in all kinds of organizational settings, whether industrial, educational, governmental, or military are attempting to run their organizations with the management by objectives process as a basic underlying management concept. Management by objectives is basically a process where by the seniors and the junior managers of an enterprise jointly identify its common goals, define each individual's major areas of responsibility in terms of the results expected… use these measures as guides for operating the unit and assessing the contribution of each of its members. In some cases, this process has been successfully carria beyond the managerial level to include hourly employees. The concept rests in a philosophy of management that emphasizes an integration between external control by managers and self-control by employees. It can apply to any manager or individual no matter what level or function, and to any organization, regardless of size. The effective functioning of this system is an agreement between a manager and an employee about that employee's groups performance goals during a stated time period. These goals can emphasise either output variables of intervening variables or some combination of both. The important thing is that goals are jointly established and agreed upon in advance. At the end of the time period, performance is reviewed in relation to

accepted goals. Both the employee and the manager participate in this review.

The philosophy behind management by objectives is to

A. effect improvement through a joint review of achievement of performance goals within a given timeframe
B. integrate external and internal controls by managers
C. provide managers scope to review the accepted output variables
D. agree upon different performance goals for managers and employees

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Answer key

## 40.0.146 UGC NET CSE | October 2020 | Part 1 | Question: 29 top

Match List-I with List-II

| | List I (Philosophical doctrines) | | List II (Philosophical schools) |
|---|---|---|---|
| $(A)$ | Syadavada | $(I)$ | Nyaya |
| $(B)$ | Anupalabdhi | $(II)$ | Buddhism |
| $(C)$ | Apoha | $(III)$ | Vedanta |
| $(D)$ | Abhava | $(IV)$ | Jainism |

Choose the correct answer from the options given below:

A. $(A)-(II),(B)-(IV),(C)-(III),(D)-(I)$
B. $(A)-(IV),(B)-(III),(C)-(II),(D)-(I)$
C. $(A)-(I),(B)-(II),(C)-(IV),(D)-(III)$
D. $(A)-(III),(B)-(I),(C)-(II),(D)-(IV)$

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## 40.0.147 UGC NET CSE | December 2018 | Part 2 | Question: 9 top

Use Dual Simplex Method to solve the following problem:

$$Maximize \quad z=-2x_1-3x_2$$

subject to:

$$x_1+x_2 \geq 2$$
$$2x_1+x_2 \leq 10$$
$$x_2+x_2 \leq 8$$
$$x_1,x_2 \geq 0$$

A. $x_1=2, x_2=0,$ and $z=-4$
B. $x_1=2, x_2=6,$ and $z=-22$
C. $x_1=0, x_2=2,$ and $z=-6$
D. $x_1=6, x_2=2,$ and $z=-18$

ugcnetcse-dec2018-paper2

## 40.0.148 UGC NET CSE | October 2020 | Part 1 | Question: 42 top

Which of the following explain the concept of values?

a. Values are beliefs tied inextricably to human emotion and behaviour
b. Values refer to desirable goals people strive to attain
c. Values are conflict-free
d. Values are ordered by importance relative to one another
e. Values are utilized primarily to effect change in knowledge of a person

Choose the correct answer from the options given below:

A. $(a),(b),(c)$ only
B. $(a),(b),(d)$ only
C. $(b),(c),(d)$ only
D. $(c),(d),(e)$ only

ugcnetcse-oct2020-paper1

## 40.0.149 UGC NET CSE | December 2018 | Part 2 | Question: 6 top

The relation $\leq$ and $>$ on a boolean algebra are defined as:

$x \leq y$ if and only if $x \vee y = y$

$x < y$ means $x \leq y$ but $x \neq y$

$x \geq y$ means $y \leq x$ and

$x > y$ means $y < x$

Considering the above definitions, which of the following is not true in the boolean algebra?

i. If $x \leq y$ and $y \leq z$, then $x \leq z$
ii. If $x \leq y$ and $y \leq x$, then $x = y$
iii. If $x < y$ and $y < z$, then $x \leq y$
iv. If $x < y$ and $y < z$, then $x < y$

Choose the correct answer from the code given below:

A. i and ii only B. ii and iii only C. iii only D. iv only

ugcnetcse-dec2018-paper2

Answer key

## 40.0.150 UGC NET CSE | December 2018 | Part 2 | Question: 4 top

A survey has been conducted on methods of commuter travel. Each respondent was asked to check Bus, Train and Automobile as a major method of travelling to work. More than one answer was permitted. The results reported were as follows :

Bus $30$ people; Train $35$ people; Automobile $100$ people; Bus and Train $15$ people; Bus and Automobile $15$ people; Train and Automobile $20$ people; and all the three methods $5$ people. How many people completed the survey form?

A. $120$ B. $165$ C. $160$ D. $115$

ugcnetcse-dec2018-paper2

Answer key

## 40.0.151 UGC NET CSE | October 2020 | Part 1 | Question: 19 top

Identifying the sequence of stages of message processing

a. Action
b. Internalisation
c. Selection
d. Understanding
e. Perception

Choose the correct answer from the options given below

A. $(a),(b),(d),(e),(c)$
B. $(b),(c),(a),(d),(e)$
C. $(d),(e),(b),(a),(c)$
D. $(e),(d),(c),(b),(a)$

ugcnetcse-oct2020-paper1

## 40.0.152 UGC NET CSE | October 2020 | Part 1 | Question: 49 top

Read the passage and answer the question:

Through their work and the efforts of others, managers in all kinds of organizational settings, whether industrial, educational, governmental, or military are attempting to run their organizations with the management by objectives process as a basic underlying management concept. Management by objectives is basically a process where by the seniors and the junior managers of an enterprise jointly identify its common goals, define each individual's major areas of responsibility in terms of the results expected… use these measures as guides for operating the unit and assessing the contribution of each of its members. In some cases, this process has been successfully carria beyond the managerial level to include hourly employees. The concept rests in a philosophy of management that emphasizes an integration between external control by managers and self-control by employees. It can apply to any manager or individual no matter what level or function, and to any organization, regardless of size. The effective functioning of this system is an agreement between a manager and an employee about that employee's groups performance goals during a stated time period. These goals can emphasise either output variables of intervening variables or some combination of both. The important thing is that goals are jointly established and agreed upon in advance. At the end of the time period, performance is reviewed in relation to accepted goals. Both the employee and the manager participate in this review.

In this frame of reference, how does an organisation function effectively?

A. By including the hourly employees in the managerial positions
B. By identifying and executing performance targets in a collaborative mode
C. By imposing a rigid philosophy of management
D. By providing separate work environment for both managers and workers

ugcnetcse-oct2020-paper1

Answer key

## 40.0.153 UGC NET CSE | October 2020 | Part 1 | Question: 7 top

Identify the teaching strategies which are employed during indirect instruction:

A. Emphasizing direct and immediate experiences
B. Presenting the stimulus material
C. Inquiry based question-answer sessions
D. Presenting, asking and solving a problem
E. Providing feedback

Choose the correct answer from the options given below

A. $A$, $B$ and $C$ only
B. $B$, $C$ and $D$ only
C. $C$, $D$ and $E$ only
D. $A$, $C$ and $E$ only

ugcnetcse-oct2020-paper1

## 40.0.154 UGC NET CSE | October 2020 | Part 1 | Question: 48 top

Read the passage and answer the question:

Through their work and the efforts of others, managers in all kinds of organizational settings, whether industrial, educational, governmental, or military are attempting to run their organizations with the management by objectives process as a basic underlying management concept. Management by objectives is basically a process where by the seniors and the junior managers of an enterprise jointly identify its common goals, define each individual's major areas of responsibility in terms of the results expected… use these measures as guides for operating the unit and assessing the contribution of each of its members. In some cases, this process has been successfully carria beyond the managerical level to include hourly employees. The concept rests in a philosophy of management that emphasizes an integration between external control by managers and self-control by employees. It can apply to any manager or individual no matter what level or function, and to any organization, regardless of size. The effective functioning of this system is an agreement between a manager and an employee about that employee's groups performance goals during a stated time period. These goals can emphasise either output variables of intervening variables or some combination of both. The important thing is that goals are jointly established and agreed upon in advance. At the end of the time period, performance is reviewed in relation to accepted goals. Both the employee and the manager participate in this review.

The critical feature of the concept in this type of management is related to

A. the assignment of responsibility to the workers
B. distinguishing the operational role between managers and workers
C. promoting of uniformity of work environment among all types of organisation
D. sharing of responsibility with an eye on results

ugcnetcse-oct2020-paper1

Answer key

## 40.0.155 UGC NET CSE | October 2020 | Part 1 | Question: 47 top

Read the passage and answer the question:

Through their work and the efforts of others, managers in all kinds of organizational settings, whether industrial, educational, governmental, or military are attempting to run their organizations with the management by objectives process as a basic underlying management concept. Management by objectives is basically a process where by the seniors and the junior managers of an enterprise jointly identify its common goals, define each individual's major areas of responsibility in terms of the results expected… use these measures as guides for operating the unit and assessing the contribution of each of its members. In some cases, this process has been successfully carria beyond the managerical level to include hourly employees. The concept rests in a philosophy of management that emphasizes an integration between external control by managers and self-control by employees. It can apply to any manager or individual no matter what level or function, and to any organization, regardless of size. The effective functioning of this system is an agreement between a manager and an employee about that employee's groups performance goals during a stated time period. These goals can emphasise either output variables of intervening variables or some combination of both. The important thing is that goals are jointly

established and agreed upon in advance. At the end of the time period, performance is reviewed in relation to accepted goals. Both the employee and the manager participate in this review.

The requisite for management by objectives is centered on

A. the control by seniors
B. the guidance of juniors
C. the participatory process
D. the organisational settings

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Answer key

## 40.0.156 UGC NET CSE | October 2020 | Part 1 | Question: 46 top

Read the passage and answer the question:

Through their work and the efforts of others, managers in all kinds of organizational settings, whether industrial, educational, governmental, or military are attempting to run their organizations with the management by objectives process as a basic underlying management concept. Management by objectives is basically a process where by the seniors and the junior managers of an enterprise jointly identify its common goals, define each individual's major areas of responsibility in terms of the results expected… use these measures as guides for operating the unit and assessing the contribution of each of its members. In some cases, this process has been successfully carria beyond the managerical level to include hourly employees. The concept rests in a philosophy of management that emphasizes an integration between external control by managers and self-control by employees. It can apply to any manager or individual no matter what level or function, and to any organization, regardless of size. The effective functioning of this system is an agreement between a manager and an employee about that employee's groups performance goals during a stated time period. These goals can emphasise either output variables of intervening variables or some combination of both. The important thing is that goals are jointly established and agreed upon in advance. At the end of the time period, performance is reviewed in relation to accepted goals. Both the employee and the manager participate in this review.

In an $\mathrm{MBO}$, organisation is managed through the identification of

A. competing goals
B. common objectives
C. its specific characteristics
D. senior and junior managers

ugcnetcse-oct2020-paper1

Answer key

## 40.0.157 UGC NET CSE | October 2020 | Part 1 | Question: 45 top

What are the advantages of Choice Based Credit System (CBCS) introduces by the UGC for higher education institutions?

a. Focuses on student centric education
b. Allows students to choose inter-disciplinary and intra-disciplinary courses
c. Makes education at par with global standards
d. Makes it easy to estimate the performance levels of students in terms of marks
e. Offers flexibility for students to undertake studies at different times and at different institutions

Choose the correct answer from the options given below:

A. $(a),(b),(c),(d)$ only
B. $(b),(c),(d),(e)$ only
C. $(a),(b),(c),(e)$ only
D. $(c),(d),(e),(a)$ only

ugcnetcse-oct2020-paper1

Answer key

## 40.0.158 UGC NET CSE | October 2020 | Part 1 | Question: 44 top

Given below are two statements:

Statement I : Equality of educational opportunities is a pre-condition for achieving equity in education.

Statement II : Equity in education can be achieved without equality of educational opportunities.

In the light of the above statements, choose the correct answer from the options given below:

A. Both Statement $I$ and Statement $II$ are true
B. Both Statement $I$ and Statement $II$ are false

C. Statement $I$ is correct but Statement $II$ is false
D. Statement $I$ is incorrect but Statement $II$ is true

ugcnetcse-oct2020-paper1

Answer key

## 40.0.159 UGC NET CSE | October 2020 | Part 1 | Question: 41 top

Match List I with List II: List I consists of the Vedangas and List II contains subjects dealt in them.

| | List I | | List II |
|---|---|---|---|
| $(A)$ | Nirukta | $(I)$ | Phonetics |
| $(B)$ | Chhandas | $(II)$ | Ritual |
| $(C)$ | Shiksha | $(III)$ | Metrics |
| $(D)$ | Kalpa | $(IV)$ | Etymology |

Choose the correct answer from the options given below:

A. $(A)-(II),(B)-(IV),(C)-(III),(D)-(I)$
B. $(A)-(IV),(B)-(III),(C)-(I),(D)-(II)$
C. $(A)-(III),(B)-(I),(C)-(II),(D)-(IV)$
D. $(A)-(I),(B)-(II),(C)-(IV),(D)-(III)$

ugcnetcse-oct2020-paper1

## 40.0.160 UGC NET CSE | October 2020 | Part 1 | Question: 6 top

Which of the following teacher competency belongs to the domain of personality and attitude?

A. Locus of control and self-efficacy
B. Managing and Monitoring
C. Planning and instructing
D. Personalising and contextualizing

ugcnetcse-oct2020-paper1

Answer key

## 40.0.161 UGC NET CSE | October 2020 | Part 1 | Question: 27 top

Given below are two statements: One is labelled as Assertion $(A)$ and the other is labelled as Reason $(R)$

Assertion $(A)$: Substance is always the subject of all predicates

Reason $(R)$: Substance is self-existent and self-conceived

In the light of the above statements, choose the correct answer from the options given below:

A. Both $(A)$ and $(R)$ are true and $(R)$ is the correct explanation of $(A)$
B. Both $(A)$ and $(R)$ are true but $(R)$ is NOT the correct explanation of $(A)$
C. $(A)$ is true but $(R)$ is false
D. $(A)$ is false but $(R)$ is true

ugcnetcse-oct2020-paper1

## 40.0.162 UGC NET CSE | October 2020 | Part 1 | Question: 31 top

A type of memory that holds the computer startup routine is

A. Cache
B. RAM
C. DRAM
D. ROM

ugcnetcse-oct2020-paper1

Answer key

## 40.0.163 UGC NET CSE | October 2020 | Part 1 | Question: 8 top

In which level of teaching, the teacher's role is more active rather than being interactive?

A. Memory level
B. Understanding level
C. Reflective level
D. Autonomous development level

ugcnetcse-oct2020-paper1

Answer key

**40.0.164 UGC NET CSE | October 2020 | Part 1 | Question: 18** top

Given below are two statements:

Statement I : Interactive and multimedia systems provide for a new culture of teaching and learning

Statement II : Virtual classrooms convert students into senseless humanoids

In the light of the above statements, choose the correct answer from the options given below:

A. Both Statement $I$ and Statement $II$ are true
B. Both Statement $I$ and Statement $II$ are false
C. Statement $I$ is correct but Statement $II$ is false
D. Statement $I$ is incorrect but Statement $II$ is true

ugcnetcse-oct2020-paper1

Answer key

**40.0.165 UGC NET CSE | October 2020 | Part 1 | Question: 38** top

Wind energy is very sensitive to the wind velocity because wind power is directly proportional to the

A. wind velocity
B. square of the wind velocity
C. square root of the wind velocity
D. cube of the wind velocity

ugcnetcse-oct2020-paper1

**40.0.166 UGC NET CSE | October 2020 | Part 1 | Question: 16** top

Which of the following is considered as an effective form of verbal communication?

A. Story-telling
B. Sloganeering
C. Use of high pitch of voice
D. Monologues

ugcnetcse-oct2020-paper1

Answer key

**40.0.167 UGC NET CSE | October 2020 | Part 1 | Question: 28** top

Given below are two Statements:

The water of the pond is muddy. It must have rained last night.

What kind of Anumana (inference) has been used in the above statements. Choose the correct option from the following.

a. S'esavat anumana
b. Comparison
c. Purvovat anumana
d. Both $(A)$ and $(B)$

Choose the appropriate answer from the options given below:

A. $(a)$ only
B. $(b)$ only
C. $(c)$ only
D. $(d)$ only

ugcnetcse-oct2020-paper1

Answer key

**40.0.168 UGC NET CSE | October 2020 | Part 1 | Question: 15** top

Given below are the two statements:

Statement I : Qualitative research is an umbrella term to refer to various research strategies that share certain characteristics. The data collected have been termed 'soft' i.e., rich in description

Statement II : Quantitative research is mainly hypothetico deductive and employs mostly statistical techniques for data analysis

In the light of the above statements, choose the correct answer from the options given below:

A. Both Statement $I$ and Statement $II$ are true
B. Both Statement $I$ and Statement $II$ are false
C. Statement $I$ is correct but Statement $II$ is is false
D. Statement $I$ is incorrect but Statement $II$ is true

ugcnetcse-oct2020-paper1

Answer key

## 40.0.169 UGC NET CSE | October 2020 | Part 1 | Question: 39 top

During physical treatment process of waste water, what is the correct order of following operations to be followed?

a. Flocculation
b. Filtration
c. Screening
d. Sedimentation

Choose the correct answer from the options given below:

A. $(c),(d),(b),(a)$
B. $(c),(d),(a),(b)$
C. $(b),(d),(a),(c)$
D. $(b),(c),(d),(a)$

ugcnetcse-oct2020-paper1

## 40.0.170 UGC NET CSE | October 2020 | Part 1 | Question: 40 top

Given below are two statements: One is labelled as Assertion $(A)$ and the other is labelled as Reason $(R)$

Assertion (A) : Carbon monoxide (CO) is a serious asphyxiant; even a short exposure may have fatal health issues.

Reason (R) : Hemoglobin present in the blood has greater affinity towards carbon monoxide than oxygen

In the light of the above statements, choose the most appropriate answer from the options given below:

A. Both $(A)$ and $(R)$ are correct and $(R)$ is the correct explanation of $(A)$
B. Both $(A)$ and $(R)$ are correct but $(R)$ is NOT the correct explanation of $(A)$
C. $(A)$ is correct but $(R)$ is not correct
D. $(A)$ is not correct but $(R)$ is correct

ugcnetcse-oct2020-paper1

Answer key

## 40.0.171 UGC NET CSE | October 2020 | Part 1 | Question: 14 top

Given below are two statements: One is labelled as Assertion (A) and the other is labelled as Reason (R)

Assertion (A) : In order to bring the gap between theory and practice both fundamental and applied research formats have to be promoted.

Reason (R) : Fundamental research focuses on theory making and applied research is directed at exploring the applicability of theory in varied practical situations

In the light of the above statements, choose the most appropriate answer from the options given below:

A. Both $(A)$ and $(R)$ are correct and $(R)$ is the correct explanation of $(A)$
B. Both $(A)$ and $(R)$ are correct but $(R)$ is NOT the correct explanation of $(A)$
C. $(A)$ is correct and $(R)$ is not incorrect
D. $(A)$ is not correct and $(R)$ is correct

ugcnetcse-oct2020-paper1

Answer key

## 40.0.172 UGC NET CSE | October 2020 | Part 1 | Question: 13 top

Which of the following are non-probability sampling methods?

1. Cluster sampling
2. Judgemental sampling
3. Systematic sampling
4. Snowball sampling
5. Quota sampling

Choose the correct answer from the options given below:

A. $1$, $2$ and $3$ only B. $2$, $4$ and $5$ only C. $2$, $3$ and $4$ only D. $3$ $4$ and $5$ only

ugcnetcse-oct2020-paper1

Answer key

## 40.0.173 UGC NET CSE | October 2020 | Part 1 | Question: 12 top

In conducting an empirical study, a researcher employs a non-parametric test for data analysis and finds that the 'statistics' arrived at is 'significant' at $.05$ level. What decisions will be warranted thereafter?

1. Rejecting the Null hypothesis $(H_0)$
2. Accepting the Null hypothesis $(H_0)$
3. Accepting the alternate hypothesis $(H_1)$
4. Keeping the decision in abeyance
5. Rejecting the alternate hypothesis $(H_1)$

Choose the correct answer from the options given below:

A. $1$ and $2$ only B. $2$ and $3$ only C. $4$ only D. $1$ and $3$ only

ugcnetcse-oct2020-paper1

## 40.0.174 UGC NET CSE | October 2020 | Part 1 | Question: 11 top

In which of the following, there is a greater flexibility in both the methods and process of research?

A. Ethnography and phenomenology
B. Descriptive survey and impact studies
C. Experimental and observation based studies
D. Expost facto and historical studies

ugcnetcse-oct2020-paper1

## 40.0.175 UGC NET CSE | October 2020 | Part 1 | Question: 10 top

Given below are two statements:

Statement I : Indirect instruction is an approach to teaching and learning in which the process is inquiry, the content involves concept and the context is a problem

Statement II : In NRT test data tell us about a student's level of proficiency in mastery of some skills or set of skills

In the light of the above statements, choose the correct answer from the options given below:

A. Both Statement $I$ and Statement $II$ are true
B. Both Statement $I$ and Statement $II$ are false
C. Statement $I$ is correct but and Statement $II$ is false
D. Statement $I$ is incorrect but Statement $II$ is true

ugcnetcse-oct2020-paper1

### 40.0.176 UGC NET CSE | October 2020 | Part 1 | Question: 9 top

Match **List-I** with **List-II**:

| | **List-I** (Scales of measurement) | | **List-II** (Description of properties) |
|---|---|---|---|
| $(A)$ | Nominal | $(I)$ | Classification and order |
| $(B)$ | Ordinal | $(II)$ | Classification |
| $(C)$ | Interval | $(III)$ | Classification, order and equal units |
| $(D)$ | Ratio | $(IV)$ | Classification, order, equal units and Absolute Zero |

Choose the correct answer from the options given below:

A. $(A)-(IV),(B)-(III),(C)-(II),(D)-(I)$
B. $(A)-(II),(B)-(I),(C)-(III),(D)-(IV)$
C. $(A)-(I),(B)-(II),(C)-(IV),(D)-(III)$
D. $(A)-(III),(B)-(IV),(C)-(I),(D)-(II)$

ugcnetcse-oct2020-paper1

### 40.0.177 UGC NET CSE | October 2020 | Part 1 | Question: 43 top

Which of the following come under the mandate of the University Grants Commission (UGC)?

a. Promotion and coordination of University education
b. Determining and monitoring standards of teaching, examination and research in Universities
c. Organising continuous professional development programmes for college and University teachers
d. Framing regulations on minimum standards of education
e. Disbursing and regulating grants to the universities and colleges

Choose the correct answer from the options given below:

A. $(a),(b),(c),(d)$ only
B. $(b),(c),(d),(e)$ only
C. $(a),(c),(d),(e)$ only
D. $(a),(b),(d),(e)$ only

ugcnetcse-oct2020-paper1

## 40.1 Binary Search Tree (1) top

### 40.1.1 Binary Search Tree: UGC NET CSE | December 2018 | Part 2 | Question: 25 top

A binary search tree is constructed by inserting the following numbers in order :

$60, 25, 72, 15, 30, 68, 101, 13, 18, 47, 70, 34$

The number of nodes in the left subtree is

A. $5$
B. $6$
C. $7$
D. $3$

ugcnetcse-dec2018-paper2 data-structures binary-search-tree

Answer key

## 40.2 Clustering (1) top

### 40.2.1 Clustering: UGC NET CSE | November 2017 | Part 2 | Question: 48 top

Which of the following is **not** a Clustering method?

A. K-Means method
B. Self Organizing feature map method
C. K- nearest neighbor method
D. Agglomerative method

ugcnetcse-nov2017-paper2 data-mining clustering

Answer key

## 40.3 Co And Architecture (2) top

### 40.3.1 Co And Architecture: UGC NET CSE | November 2017 | Part 2 | Question: 46 top

Which of the following Super Computers is the fastest Super Computer?

A. Sun-way TaihuLight
B. Titan
C. Piz Daint
D. Sequoia

ugcnetcse-nov2017-paper2 co-and-architecture

Answer key

### 40.3.2 Co And Architecture: UGC NET CSE | November 2017 | Part 2 | Question: 50 top

Which speed up could be achieved according to Amdahl's Law for infinte number of processes if $5\%$ of a program is sequential and the remaining part is ideally parallel?

A. Infinite B. $5$ C. $20$ D. $50$

ugcnetcse-nov2017-paper2 co-and-architecture

Answer key

## 40.4 Database Normalization (1) top

### 40.4.1 Database Normalization: UGC NET CSE | December 2018 | Part 2 | Question: 82 top

Consider a relation schema $R = (A, B, C, D, E, F)$ on which the following functional dependencies hold :

- $A \rightarrow B$
- $B, C \rightarrow D$
- $E \rightarrow C$
- $D \rightarrow A$

What are the candidate keys of $R$ ?

A. $AE$ and $BE$ B. $AE, BE$ and $DE$ C. $AEF, BEF$ and $BCF$ D. $AEF, BEF$ and $DEF$

ugcnetcse-dec2018-paper2 databases database-normalization

Answer key

## 40.5 Disk Scheduling (1) top

### 40.5.1 Disk Scheduling: UGC NET CSE | November 2017 | Part 2 | Question: 37 top

In _____ disk scheduling algorithm, the disk head moves from one end to other end of the disk, serving the requests along the way. When the head reaches the other end, it immediately returns to the beginning of the disk without serving any requests on the return trip.

A. LOOK B. SCAN C. C-LOOK D. C-SCAN

ugcnetcse-nov2017-paper2 operating-system disk-scheduling

Answer key

## 40.6 Dynamic Programming (1) top

### 40.6.1 Dynamic Programming: UGC NET CSE | December 2018 | Part 2 | Question: 23 top

Consider two sequences $X$ and $Y$ :

$X = < 0, 1, 2, 1, 3, 0, 1 >$

$Y = < 1, 3, 2, 0, 1, 0 >$

The length of longest common subsequence between $X$ and $Y$ is

A. $2$ B. $3$ C. $4$ D. $5$

ugcnetcse-dec2018-paper2 algorithms dynamic-programming

Answer key

## 40.7 E Technologies (1) top

### 40.7.1 E Technologies: UGC NET CSE | November 2017 | Part 2 | Question: 47 top

Which of the following statements about ERP systems is **true**?

A. Most ERP software implementations fully achieve seamless integration
B. ERP software packages are themselves combinations of separate applications for manufacturing, materials, resource planning, general ledger, human resources, procurement and order entry
C. Integration of ERP systems can be achieved in only one way
D. An ERP package implemented uniformly throughout an enterprise is likely to contain very flexible connections to allow charges and software variations

ugcnetcse-nov2017-paper2 e-technologies

Answer key

## 40.8 Ethernet (1) top

### 40.8.1 Ethernet: UGC NET CSE | November 2017 | Part 2 | Question: 28 top

The number of bits used for addressing in Gigabit Ethernet is _____.

A. $32$ bits
B. $48$ bits
C. $64$ bits
D. $128$ bits

ugcnetcse-nov2017-paper2 computer-networks ethernet

Answer key

## 40.9 Graph Algorithms (1) top

### 40.9.1 Graph Algorithms: UGC NET CSE | December 2018 | Part 2 | Question: 27 top

Match $\text{List I}$ with $\text{List II}$ and choose the correct answer from the code given below.

| | **List I (Graph Algorithm)** | | **List II (Time Complexity)** |
|---|---|---|---|
| (a) | Dijkstra's algorithm | (i) | $O(E\,lg\,E)$ |
| (b) | Kruskal's algorithm | (ii) | $\Theta(V^3)$ |
| (c) | Floyd-Warshall algorithm | (iii) | $O(V^2)$ |
| (d) | Topological sorting | (iv) | $\Theta(V+E)$ |

where $V$ and $E$ are the number of vertices and edged in graph respectively.

**Code :**

A. (a)-(i), (b)-(iii), (c)-(ii), (d)-(iv)
B. (a)-(iii), (b)-(i), (c)-(ii), (d)-(iv)
C. (a)-(i), (b)-(iii), (c)-(iv), (d)-(ii)
D. (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)

ugcnetcse-dec2018-paper2 algorithms graph-algorithms time-complexity

Answer key

## 40.10 Heap (1) top

### 40.10.1 Heap: UGC NET CSE | December 2018 | Part 2 | Question: 22 top

The elements $42, 25, 30, 40, 22, 35, 26$ are inserted one by one in the given order into a max-heap. The resultant max-heap is sorted in an array implementation as

A. $< 42, 40, 35, 25, 22, 30, 26 >$
B. $< 42, 35, 40, 22, 25, 30, 26 >$
C. $< 42, 40, 35, 25, 22, 26, 30 >$
D. $< 42, 35, 40, 22, 25, 26, 30 >$

ugcnetcse-dec2018-paper2 data-structures heap

Answer key

## 40.11 Indexing (1) top

### 40.11.1 Indexing: UGC NET CSE | December 2018 | Part 2 | Question: 85 top

A clustering index is defined on the fields which are of type

A. non-key and ordering
B. non-key and non-ordering
C. key and ordering
D. key and non-ordering

ugcnetcse-dec2018-paper2 databases indexing

Answer key

## 40.12 Ip Addressing (1) top

### 40.12.1 Ip Addressing: UGC NET CSE | November 2017 | Part 2 | Question: 30 top

The IP address _____ is used by hosts when they are being booted.

A. $0.0.0.0$ B. $1.0.0.0$ C. $1.1.1.1$ D. $255.255.255.255$

ugcnetcse-nov2017-paper2 computer-networks ip-addressing

Answer key

## 40.13 Linked List (1) top

### 40.13.1 Linked List: UGC NET CSE | December 2018 | Part 2 | Question: 29 top

Consider a singly linked list. What is the worst case time complexity of the best-known algorithm to delete the node $a$, pointer to this node is $q$, from the list?

A. $O(n \lg n)$ B. $O(n)$ C. $O(\lg n)$ D. $O(1)$

ugcnetcse-dec2018-paper2 data-structures linked-list time-complexity

Answer key

## 40.14 Microprocessors (1) top

### 40.14.1 Microprocessors: UGC NET CSE | December 2015 | Part 3 | Question: 3 top

Which of the following $8085$ microprocessor hardware interrupt has the lowest priority?

A. RST $6.5$ B. RST $7.5$ C. TRAP D. INTR

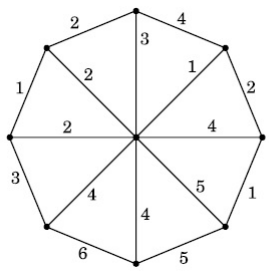
ugcnetcse-dec2015-paper3 microprocessors 8085-microprocessor

Answer key

## 40.15 Minimum Spanning Tree (1) top

### 40.15.1 Minimum Spanning Tree: UGC NET CSE | December 2018 | Part 2 | Question: 12 top

Consider the graph shown below:




Use Kruskal's algorithm to find the minimum spanning tree of the graph. The weight of this minimum spanning tree is

A. $17$ B. $14$ C. $16$ D. $13$

ugcnetcse-dec2018-paper2 algorithms minimum-spanning-tree

Answer key

## 40.16 Multiplexing (1) top

### 40.16.1 Multiplexing: UGC NET CSE | June 2011 | Part 2 | Question: 26 top

A comparison of frequency division and time division multiplexing system shows that

A. $FDM$ requires a lower bandwidth, but $TDM$ has greater noise immunity.
B. $FDM$ has greater noise immunity and requires lower bandwidth than $TDM$.
C. $FDM$ requires channel synchronization, while $TDM$ has greater noise immunity.
D. $FDM$ requires more multiplex while $TDM$ requires band pass filter.

ugcnetcse-june2011-paper2 computer-networks multiplexing

Answer key

## 40.17 Osi Model (1) top

### 40.17.1 Osi Model: UGC NET CSE | November 2017 | Part 2 | Question: 29 top

Which of the following layer of OSI Reference model is also called end-to-end layer ?

A. Network layer
B. Datalink layer
C. Session layer
D. Transport layer

ugcnetcse-nov2017-paper2 computer-networks osi-model

Answer key

## 40.18 Physical Layer (1) top

### 40.18.1 Physical Layer: UGC NET CSE | June 2011 | Part 2 | Question: 27 top

If carrier modulated by a digital bit stream, has one one of the possible phase of $0, 90, 180$ and $270$ degrees, then modulation called

A. BPSK
B. QPSK
C. QAM
D. MSK

ugcnetcse-june2011-paper2 computer-networks physical-layer

Answer key

## 40.19 Software Testing (1) top

### 40.19.1 Software Testing: UGC NET CSE | November 2017 | Part 2 | Question: 45 top

Which of the following testing techniques ensures that the software products runs correctly after the changes in maintenance?

A. Path Testing
B. Integration Testing
C. Unit Testing
D. Regression Testing

ugcnetcse-nov2017-paper2 is&software-engineering software-testing

Answer key

## 40.20 Sorting (1) top

### 40.20.1 Sorting: UGC NET CSE | December 2018 | Part 2 | Question: 30 top

The second smallest of $n$ elements can be found with ____ comparisons in the worst case.

A. $n-1$
B. $\lg n$
C. $n + ceil(\lg n) - 2$
D. $\frac{3n}{2}$

ugcnetcse-dec2018-paper2 algorithms sorting

## 40.21 Sql (1) top

### 40.21.1 Sql: UGC NET CSE | November 2017 | Part 2 | Question: 17 top

In SQL, _____ is an Aggregate function.

A. SELECT
B. CREATE
C. AVG
D. MODIFY

ugcnetcse-nov2017-paper2 databases sql

Answer key

## 40.22 Stack (1) top

### 40.22.1 Stack: UGC NET CSE | December 2018 | Part 2 | Question: 24 top

Consider the following postfix expression with single digit operands :

$6\,2\,3*/4\,2* + 6\,8* -$

The top two elements of the stack after the second $*$ is evaluated, are :

A. $8,2$ B. $8,1$ C. $6,2$ D. $6,3$

ugcnetcse-dec2018-paper2 data-structures stack

Answer key

## 40.23 Transaction And Concurrency (1) top

### 40.23.1 Transaction And Concurrency: UGC NET CSE | December 2018 | Part 2 | Question: 83 top

Consider the following sequence of two transactions on a bank account $(A)$ with initial balance $20,000$ that transfers $5,000$ to another account $(B)$ and then apply $10\%$ interest.

i. T1 start
ii. T1 A old=$20,000$ new $15,000$
iii. T1 B old = $12,000$ new = $17,000$
iv. T1 commit
v. T2 start
vi. T2 A old = $15,000$ new = $16,500$
vii. T2 commit

Suppose the database system crashes just before log record (vii) is written. When the system is restarted, which one statement is true of the recovery process?

A. We must redo log record (vi) to set $A$ to $16,500$
B. We must redo log record (vi) to set $A$ to $16,500$ and then redo log records (ii) and (iii)
C. We need not redo log records (ii) and (iii) because transaction $T1$ is committed
D. We can apply redo and undo operations in arbitrary order because they are idempotent

ugcnetcse-dec2018-paper2 databases transaction-and-concurrency

Answer key

# Answer Keys

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 40.0.1 | D | 40.0.2 | B;C;D | 40.0.3 | B | 40.0.4 | A | 40.0.5 | A |
| 40.0.6 | C | 40.0.7 | B | 40.0.8 | B | 40.0.9 | C | 40.0.10 | B |
| 40.0.11 | C | 40.0.12 | C | 40.0.13 | D | 40.0.14 | C | 40.0.15 | B |
| 40.0.16 | A | 40.0.17 | D | 40.0.18 | C | 40.0.19 | C | 40.0.20 | B |
| 40.0.21 | C | 40.0.22 | A | 40.0.23 | D | 40.0.24 | X | 40.0.25 | B |
| 40.0.26 | D | 40.0.27 | D | 40.0.28 | D | 40.0.29 | A | 40.0.30 | B |
| 40.0.31 | A | 40.0.32 | C | 40.0.33 | D | 40.0.34 | C | 40.0.35 | D |
| 40.0.36 | A | 40.0.37 | B | 40.0.38 | B | 40.0.39 | B | 40.0.40 | B |
| 40.0.41 | A | 40.0.42 | C | 40.0.43 | D | 40.0.44 | C | 40.0.45 | B |
| 40.0.46 | D | 40.0.47 | D | 40.0.48 | D | 40.0.49 | A | 40.0.50 | C |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 40.0.51 | D | 40.0.52 | B | 40.0.53 | C | 40.0.54 | A | 40.0.55 | A |
| 40.0.56 | D | 40.0.57 | A | 40.0.58 | A | 40.0.59 | B | 40.0.60 | D |
| 40.0.61 | X | 40.0.62 | A | 40.0.63 | C | 40.0.64 | C | 40.0.65 | D |
| 40.0.66 | A | 40.0.67 | B | 40.0.68 | A | 40.0.69 | D | 40.0.70 | A |
| 40.0.71 | C | 40.0.72 | Q-Q | 40.0.73 | C | 40.0.74 | B | 40.0.75 | B |
| 40.0.76 | D | 40.0.77 | D | 40.0.78 | D | 40.0.79 | D | 40.0.80 | Q-Q |
| 40.0.81 | Q-Q | 40.0.82 | Q-Q | 40.0.83 | A | 40.0.84 | Q-Q | 40.0.85 | Q-Q |
| 40.0.86 | Q-Q | 40.0.87 | Q-Q | 40.0.88 | Q-Q | 40.0.89 | Q-Q | 40.0.90 | B |
| 40.0.91 | D | 40.0.92 | A | 40.0.93 | B | 40.0.94 | Q-Q | 40.0.95 | B |
| 40.0.96 | Q-Q | 40.0.97 | Q-Q | 40.0.98 | Q-Q | 40.0.99 | Q-Q | 40.0.100 | B |
| 40.0.101 | Q-Q | 40.0.102 | Q-Q | 40.0.103 | Q-Q | 40.0.104 | Q-Q | 40.0.105 | Q-Q |
| 40.0.106 | Q-Q | 40.0.107 | Q-Q | 40.0.108 | Q-Q | 40.0.109 | Q-Q | 40.0.110 | Q-Q |
| 40.0.111 | A | 40.0.112 | B | 40.0.113 | C | 40.0.114 | B | 40.0.115 | D |
| 40.0.116 | A | 40.0.117 | Q-Q | 40.0.118 | Q-Q | 40.0.119 | B | 40.0.120 | Q-Q |
| 40.0.121 | Q-Q | 40.0.122 | Q-Q | 40.0.123 | Q-Q | 40.0.124 | Q-Q | 40.0.125 | Q-Q |
| 40.0.126 | Q-Q | 40.0.127 | Q-Q | 40.0.128 | Q-Q | 40.0.129 | Q-Q | 40.0.130 | Q-Q |
| 40.0.131 | Q-Q | 40.0.132 | B | 40.0.133 | Q-Q | 40.0.134 | B | 40.0.135 | Q-Q |
| 40.0.136 | Q-Q | 40.0.137 | Q-Q | 40.0.138 | Q-Q | 40.0.139 | Q-Q | 40.0.140 | Q-Q |
| 40.0.141 | Q-Q | 40.0.142 | C | 40.0.143 | D | 40.0.144 | A | 40.0.145 | A |
| 40.0.146 | B | 40.0.147 | Q-Q | 40.0.148 | B | 40.0.149 | Q-Q | 40.0.150 | Q-Q |
| 40.0.151 | D | 40.0.152 | B | 40.0.153 | D | 40.0.154 | D | 40.0.155 | C |
| 40.0.156 | B | 40.0.157 | C | 40.0.158 | C | 40.0.159 | B | 40.0.160 | A |
| 40.0.161 | B | 40.0.162 | D | 40.0.163 | A | 40.0.164 | C | 40.0.165 | D |
| 40.0.166 | A | 40.0.167 | A | 40.0.168 | A | 40.0.169 | B | 40.0.170 | A |
| 40.0.171 | A | 40.0.172 | B | 40.0.173 | D | 40.0.174 | A | 40.0.175 | C |
| 40.0.176 | B | 40.0.177 | D | 40.1.1 | C | 40.2.1 | C | 40.3.1 | A |
| 40.3.2 | C | 40.4.1 | Q-Q | 40.5.1 | D | 40.6.1 | 4 | 40.7.1 | B |
| 40.8.1 | B | 40.9.1 | Q-Q | 40.10.1 | Q-Q | 40.11.1 | Q-Q | 40.12.1 | A |
| 40.13.1 | B | 40.14.1 | X | 40.15.1 | Q-Q | 40.16.1 | Q-Q | 40.17.1 | D |
| 40.18.1 | Q-Q | 40.19.1 | D | 40.20.1 | Q-Q | 40.21.1 | C | 40.22.1 | B |
| 40.23.1 | Q-Q | | | | | | | | |